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TABLE OF CONTENTS

Nutritional Status of Cambridge School-children JOHN YUDKIN, M.D. 201

Nutrition and Scholastic Attainment I. F. MACKENZIE, M.B. 205

Koilonychia and its Recovery in Cases of Thyrotoxicosis LORNA COOKE, M.B., and STELLA M. LUTY, M.B. 207

Histological Effect of Atebrin Injection FRANK HAWKING, D.M. 209

Skin Sterilization by Colourless Flavine VICTOR BONNEY, F.R.C.S., and H. S. ALLEN, F.R.C.S. ..210

Corticotrophic Hormone for Pituitary Cachexia R. E. HEMPHILL, M.D., and M. REISS, M.D. ..211

Trachoma in London: The End of a Chapter ARNOLD SORSBY, F.R.C.S. 220

MEDICAL MEMORANDA

Effect on Nutrition of School-children of adding Vitamins and Minerals to the Diet. CECILE ASHER, M.D. 213

Herpes Simplex Corneae in Malaria. J. GRAHAM SCOTT, M.D. 213

GENERAL ARTICLES AND NEWS

A Walking Calliper Splint. J. MACFARLANE COWAN, M.B. 215

A Clinical Camera-stand. B. R. BILLINGS, M.R.C.S. 215

KING EDWARD'S HOSPITAL FUND 221

MEDICAL RESEARCH IN EIRE 221

RELIEF IN EUROPE 221

THE SERVICES 226

UNIVERSITIES AND COLLEGES 227

MEDICAL NOTES IN PARLIAMENT 228

MEDICAL NEWS 229

LETTERS AND ANSWERS

Elephantiasis after Plaster — Repairing Torn Perineum—Treatment of Whooping-cough Spasms—Shock Treatment—Tug-of-War for Girls—Chronic Vasomotor Rhinitis — Urticaria — Trophic Ulcers—Shooting Pains in the Head—Exposure to Blast—Transmission of Cancer by Transfusion—Income Tax —An Argentine looks at British Plastic Surgery—Sickness Records of Hospital Nurses—Army Council and Wounded Medical Officers—D.P.M.: Minimum Requirement—Warts 230-2

LEADING ARTICLES

Control of Bacillary Dysentery 216

D.D.T.: New Synthetic Insecticide 217

ANNOTATIONS

Health of the Student 218

Medical Benevolence in Wartime 219

Freedom to Publish 219

Fatty Liver and Sudden Death 219

Infected Livers Wanted 219

REVIEWS

Principles of Nutrition 214

A Yearbook of Health Instruction 214

A Handbook on V.D. 214

Notes on Books 215

OBITUARY

L. E. Shore, O.B.E., M.D. 226

Frank Bryan, M.B., B.Ch. 226

Bernard Kelly, L.R.C.P.&S. 226

Rees Phillips, O.B.E., M.D. 226

H. J. Milligan, M.D., D.P.H. 226

SUPPLEMENT

Medical Services in Denmark 33

PUBLICATION OF SCIENTIFIC MATERIAL BY MEDICAL OFFICERS 34

CORRESPONDENCE 34

BRANCH AND DIVISION MEETINGS 38

H.M. FORCES APPOINTMENTS 38

CORRESPONDENCE

Milk for School-children. Sir WALTER LANGDON-BROWN, M.D. 222

Infective Hepatitis. J. MACKAY-DICK, M.B. 222

Military Psychiatry. B. H. SHAW, M.D. 222

Resistance of Gonococci to Chemotherapy. S. TAYLOR, F.R.C.S., and F. C. BARLOW, M.B. 223

Gonorrhoea on the Continent. A. FESSLER, M.D. 223

Rheumatic Fever and the Sulphonamides. A. J. GLAZEBROOK, M.B.; G. SCHOENEWALD, L.R.C.S. 223

Bacterial Endocarditis treated by Sulphapyridine. R. P. LAWRIE, M.B. 224

Slow Induction of Anaesthesia and Vomiting. A. H. GALLEY, M.B. 224

Perineal Tears. ISABEL GARDNER, M.B.; WILLIAM HUNTER, M.D. 224

Timing in Schäfer's Method. SAMUEL HALES, M.R.C.S. 224

Results of Colles's Fracture. PHYLLIS EWART, M.B. 225

Dangers of Lay Psychotherapy. The Rev. HORACE DOWLING 225

Spanish Medicine. JAMES ELIAS, L.M.S. 225

Treatment of Gas Gangrene. CLAUDE FRANKAU, F.R.C.S. 225

Epidemiology Section 229

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BRITISH MEDICAL JOURNAL

LONDON SATURDAY AUGUST 12 1944

THE NUTRITIONAL STATUS OF CAMBRIDGE SCHOOL-CHILDREN

BY

JOHN YUDKIN, M.D., Ph.D., F.R.I.C.

Lieut., R.A.M.C.; formerly Sir Halley Stewart Fellow at Dunn Nutritional Laboratory, University of Cambridge and Medical Research Council

A survey of over 1,100 Cambridge children was conducted in Jan. and Feb., 1942, and the majority were re-examined a year later. The purpose of the investigation was fourfold: first, to determine nutritional trends during the war by repeated examinations of the children; secondly, to see whether vitamin supplements would affect the children in any detectable way; thirdly, to examine the possible interrelation of the various physical and mental attributes of the children; and, fourthly, within the limited scope possible in an investigation which was primarily nutritional, to determine the relation between social conditions and the physical state of the children.

The children were between 4 and 11 years of age, attending elementary schools. There were altogether about 7,500 children attending these schools in Cambridge, of whom some 6,000 were between 4 and 11 years old; the children included in this investigation were thus about 15% of the total or nearly 20% of the age group 4–11. Of those between 4 and 10 years, approximately half were from a school in a fairly poor district (junior school A) and the others from a school in a comparatively well-to-do district (junior school B); the 11-year-old children were from a senior elementary school in the same better-class district as junior school B.

Although the senior school and the junior school B were so close to each other, the children attending them were not exactly comparable. The senior school received children from a rather wider area than the junior school; some of its pupils had attended the latter, but many had attended schools from slightly poorer though neighbouring districts. Moreover, the children at the senior school were a selected group in the sense that they were children from the junior schools who had not gone on to a central, secondary, or public school. This selection of children for higher education depended partly on the results of a scholarship examination held when the children were aged 10 or 11, and partly on the financial circumstances of the family. Some children, usually of poor families, did not avail themselves of the scholarships although they had reached the requisite standard at the examination; on the other hand, several of the children were sent to one of the higher schools by parents who could afford to do so, even though their children had not been awarded a scholarship.

Although, therefore, we may legitimately compare the children from the two junior schools, those from the senior school fall into a rather special category; and the findings which are recorded here must be viewed in the light of the selection to which they have been subjected.

The Investigations Undertaken

The procedure consisted of measurement of the height and weight; clinical examination, especially for signs of nutritional deficiency; examination of the gums and teeth; determination of haemoglobin; measurement of physical strength by the grip dynamometer. Additional data were obtained with the older children. Measurements of visual acuity, examination of the fundus oculi, slit-lamp examination of the eyes, and measurement of intelligence and educational attainment were carried out in children of 8 years and over, and dark-adaptation was determined in children of 11 years. The dark-adaptation findings are described elsewhere (Robertson and Yudkin, 1944). The results of the clinical and dental examinations, which were undertaken by the School Medical Officer and the School Dental Officer, and the results of the mental tests will be published later.

Since the first examination half of the children at each school have daily been receiving pellets containing 5,000 i.u. vitamin A, 1 mg. vitamin B_1, 25 mg. vitamin C, and 500 i.u. vitamin D, so that, allowing for holidays and possible absences from school, the pellets supplied roughly half the daily requirements of these substances. The other half of the children have been given control pellets of similar size and taste but different in colour.* Neither the teachers nor the parents were aware that half of the pellets were devoid of vitamins. Records of absences from school, of illness, and of general behaviour are being kept by the teachers.

At the second examination some further studies were made on about 200 of the oldest children. These tests were carried out in order to see if it could be confirmed that vitamin supplements, as has been reported, result in improved physiological performance; they have been recorded elsewhere (Jenkins and Yudkin, 1943).

Unless otherwise stated, all the results described in this paper refer to the first examination, carried out early in 1942.

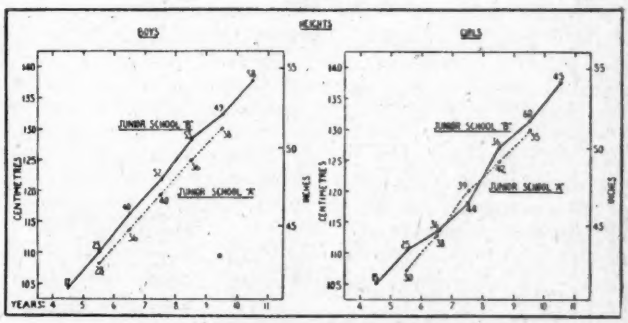

FIG. 1.—Height of Cambridge school-children: comparison of "good" and "poor" school.

(*a*) *Height and Weight.*—The children were weighed completely stripped except for shorts or knickers. Their average heights and weights were higher than those reported for most other areas of the country; they are similar, for example, to the figures for 1938 for London school-children, which are said to be above average for the country generally† (Benjamin, 1943).

* The pellets were generously manufactured to my specifications and given by Messrs. British Drug Houses Ltd.

† The average weights of the Cambridge children were actually very slightly lower than those recorded for the London children; if, however, one allows for the fact that the London children were weighed in their ordinary indoor clothing, the weights are slightly higher.

Nevertheless the children from the poorer junior school A were about 3/4 in. shorter and 2½ lb. lighter than those from junior school B (Figs. 1 and 2). The average heights and weights for the children of the senior school (age 11+) were as follows. Height: boys (90) 53.8 in.; girls (98) 56.0 in. Weight: boys (83) 73.8 lb.; girls (98) 76.3 lb.

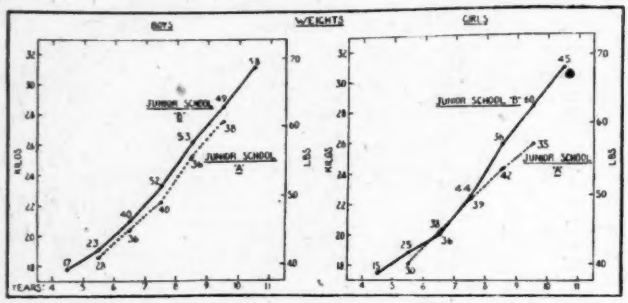

FIG. 2.—Weight of Cambridge school-children: comparison of "good" and "poor" school.

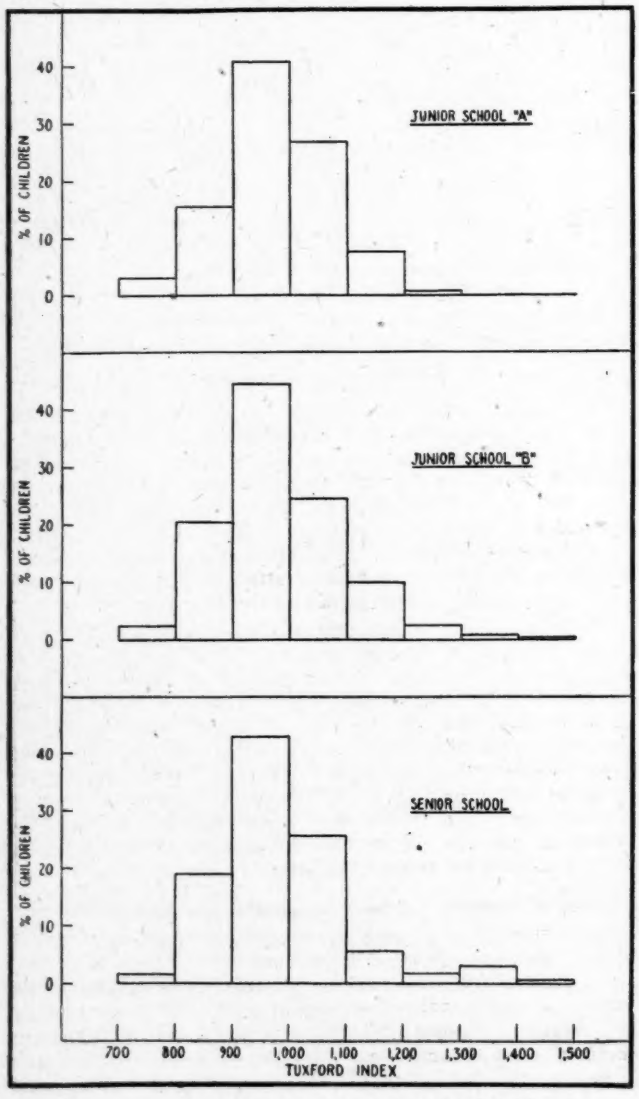

FIG. 3.—The Tuxford indices of the school-children.

Many workers have attempted to express the nutritional status of a child by an index which is usually derived from a combination of two or more anthropometric measurements. The most frequently used of these are derived from formulae involving the height and weight of the child. By testing a number of such formulae Huws Jones (1938) decided that the most reliable is the Tuxford index. In its original form (Tuxford, 1917) the index is:

$$\text{Boys: } \frac{W}{H} \times \frac{(381 - \text{age in months})}{54}$$

$$\text{Girls: } \frac{W}{H} \times \frac{(354 - \text{age in months})}{48}$$

More recently, Tuxford (1942) has revised the formula so that it now becomes:

$$\text{Boys: } \frac{W}{H} \times \frac{(335 - \text{age in months})}{48}$$

$$\text{Girls: } \frac{W}{H} \times \frac{(308 - \text{age in months})}{42}$$

This latest formula is based on the figures for London school-children of 1938, which, as mentioned above, are very similar to those of our Cambridge children.

In general, such weight-for-height formulae indicate whether a child is heavy enough for his height—i.e., is well enough "covered." Now, it is well known that slight but long-continued malnutrition affects growth in height as well as in weight, and it might be thought that the retardation of both might possibly be such as to lead to no change in a weight-for-height index. This hypothesis is supported by the findings with the Cambridge school-children. Although, compared with the children from the better-class school, those from the poorer school are of inferior nutritional status, as shown by their heights, weights, and other attributes (see below), the Tuxford indices of the children of both these schools are exactly similar (Fig. 3; this includes the distribution of the indices for the senior school).

(*b*) *Haemoglobin.*—The haemoglobin was estimated on blood obtained from pricking the left thumb. The estimations in 1942 were carried out by using a Dare haemoglobinometer, which, through the kindness of Dr. Lucy Wills, I was able to calibrate against a standard Haldane apparatus. In 1943 the more satisfactory alkaline haematin method of King was used. Very little change in haemoglobin levels was found during the year (see below). The results shown in Fig. 4 are

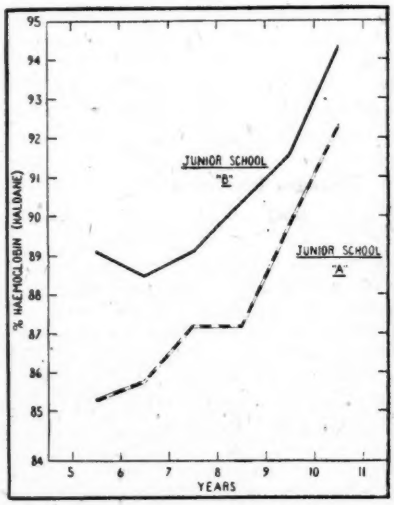

FIG. 4.—The haemoglobin readings.

those obtained in 1943, using the better technique. The average haemoglobin value of the school-children was 91% (Haldane). This is much higher than that found by Wills *et al.* (1942) for London school-children and by Davidson and co-workers (1942, 1943) for Edinburgh school-children. Both groups of investigators reported an average haemoglobin level of 80-82% in children examined in 1942. As with heights and weights, children from the poorer junior school A showed lower readings (by about 2%) than those from junior school B (Fig. 4). For children of the senior school the average haemoglobin level was 92.2%. There was no difference in haemoglobin between the boys and the girls.

(*c*) *Dynamometer.*—The strength of grip of the right hand was measured with a hand dynamometer. The boys, as would

be expected, had a stronger grip than the girls. Once again the children from the better-class school were superior to those from the poorer school, and this was seen both in the boys and in the girls (Table I; Fig. 5).

TABLE I.—*Dynamometer Readings of Cambridge School-children*

Age	Average Grip in Kilogrammes					
	Junior School A		Junior School B		Senior School	
	No.	Dyn. kilo.	No.	Dyn. kilo.	No.	Dyn. kilo.
Boys						
4+	6	8·7	18	10·0		
5+	32	11·1	23	11·7		
6+	32	13·0	43	13·9		
7+	43	15·5	38	17·8		
8+	34	18·6	52	19·5		
9+	38	19·7	49	21·2		
10+	14	19·8	54	24·9		
11+					88	24·6
Girls						
4+	5	8·6	15	8·5		
5+	30	9·8	29	10·4		
6+	36	11·1	36	13·4		
7+	35	14·2	44	15·3		
8+	38	16·9	39	17·5		
9+	40	17·8	54	19·4		
10+			42	21·7		
11+					95	22·0

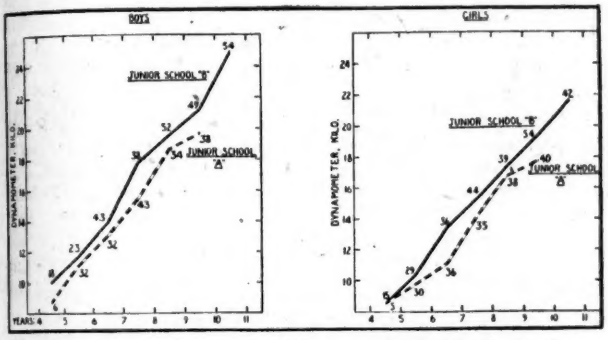

FIG. 5.—Dynamometer recordings of the strength of grip.

(*d*) *Slit-lamp Examination of the Eyes.*—The results of the examination of the eyes with the slit-lamp microscope have been described in a previous publication (Kodicek and Yudkin, 1942).

Changes between 1942 and 1943

In order to see whether the fourth year of the war had any appreciable effect on the condition of the Cambridge children, their physical measurements at the second examination were compared with those of the same age groups examined a year previously; for example, the average weight for 7-year-old children examined in 1943 has been compared with that of 7-year-old children seen in 1942. No significant difference was found in the dynamometer readings (Table II), but the average heights and weights of children in 1943 were greater than those of children of the same age a year ago (Tables III and IV). The average height of boys and girls of junior school A in 1943 was about 0.6 in. more than in 1942; in the better-class junior school B it was about 0.3 in. The difference in weight was about 1½ lb. in junior school A; in junior school B there was no appreciable change in weight in the boys, but an increase of just over 1 lb. in the girls. The haemoglobin levels were about 1% higher; since, however, the estimations in 1942 and 1943 were carried out with different techniques it would be unwise to attach any great significance to the comparison of the values at the two examinations.

TABLE II.—*Dynamometer Readings of Cambridge School-children. Comparison of Children of 1942 and 1943*

Age	Average Grip in Kilogrammes			
	Boys		Girls	
	1942	1943	1942	1943
Junior School A				
6	13·0	13·1	11·1	13·7
7	15·5	15·6	14·2	14·6
8	18·6	18·0	16·9	16·2
Junior School B				
5	11·7	13·2	10·4	10·6
6	13·9	14·7	13·4	13·4
7	17·8	17·9	15·3	15·1
8	19·5	20·1	17·5	15·1
9	21·2	21·1	19·4	17·7
10	24·9	24·3	21·7	20·8

TABLE III.—*Height of Cambridge School-children. Comparison of Children of 1942 and 1943*

Age	Average Height in Inches			
	Boys		Girls	
	1942	1943	1942	1943
Junior School A				
5	42·6	43·6	42·2	44·7
6	44·7	45·0	44·4	45·4
7	47·0	47·0	47·4	46·7
8	49·3	50·5	49·1	50·0
9	51·4	51·3	51·1	51·3
10	51·6	52·6	51·9	54·1
Junior School B				
5	43·5	43·9	43·7	44·0
6	45·8	46·2	44·7	45·5
7	48·0	48·2	46·6	47·6
8	50·6	50·5	50·0	50·2
9	52·1	52·5	51·8	52·5
10	54·3	54·4	54·1	54·2

TABLE IV.—*Weight of Cambridge School-children. Comparison of Children of 1942 and 1943*

Age	Average Weight in Pounds			
	Boys		Girls	
	1942	1943	1942	1943
Junior School A				
5	40·9	41·7	39·8	44·3
6	44·9	44·5	44·4	44·3
7	48·8	50·0	49·3	49·4
8	55·4	54·9	53·5	55·6
9	60·5	63·7	57·0	58·6
10	61·8	65·5	62·9	67·5
Junior School B				
5	42·0	43·7	41·6	43·2
6	46·2	47·6	44·2	47·7
7	51·3	51·4	49·7	50·3
8	57·6	58·4	57·0	56·0
9	62·7	63·1	62·5	63·3
10	68·4	67·0	68·0	71·4

It is evident that, far from any adverse effect being apparent during the fourth year of the war, there was in fact an improvement in physique. There has been in general a gradual increase of height and weight of children since the beginning of the century, and that this increase is still observed suggests that the present nutrition of at least this group of children is being satisfactorily maintained. The fact that the increases in height and weight were greater in the poorer-class school is also a matter for satisfaction, indicating as it does that the differences between the nutritional status of the children of the two schools are being minimized.

Effect of Multiple Vitamin Preparations on School-children

Apart from the slit-lamp examination, all the examinations of the Cambridge school-children have been repeated after one year's feeding with the vitamin preparation. In addition, the records of the school-teachers were analysed, the opinions of the parents regarding the progress of their children were obtained, and additional examinations were made with a view to determining physiological function and the response to the vitamin C saturation test.

Physique.—No difference was detected in the gain in weight or height, in haemoglobin, or in strength of grip between the children receiving the vitamin pellets and those receiving control pellets.

Dark-adaptation.—There was no alteration in the dark-adaptation (final rod threshold) after the ingestion of the vitamin supplements (see also Robertson and Yudkin, 1944).

Illness.—The records of absences kept by the teachers have been analysed so as to give so far as is possible an idea of the relative

incidence of the major groups of illness. Since, however, the only difference was seen in those illnesses classed as respiratory (colds, coughs, bronchitis, influenza) I have for simplicity given in Table V the incidence and duration of respiratory illness only on the one hand and of all other illnesses on the other. I have also included absences due to causes other than illness. It will be seen that the "vitamin" children in both the junior schools were less often away because of colds, and on the average for a fewer number of days per illness, than the control children. This difference was not seen in the older children of the senior school. In junior school B the difference in both incidence and duration of colds was statistically significant. The difference in the number of children at this school who had no colds—76 of the 217 "vitamin" children and 55 of the 212 "control" children—was also statistically significant. In junior school A the differences were not statistically significant, but this may be due to the fact that the records of the teachers in this poorer school were not so well kept as in junior school B. For example, the average attendance during the year, according to the official records of the local education authorities, was slightly better at junior school B (90% attendance) than at junior school A (89%); yet the absences recorded by the teachers were appreciably fewer at the latter.

TABLE V.—*Absences from School of Cambridge School-children*

	Respiratory Illnesses			Other Illnesses			Other Absences		
	Absences per Child	Days Away per Child	Days Away per Absence	Absences per Child	Days Away per Child	Days Away per Absence	Absences per Child	Days Away per Child	Days Away per Absence
Junior School A									
Vitamin group	0·74	2·73	3·69	3·11	12·18	3·91	1·47	2·83	1·92
Control group	0·79	3·54	4·45	3·14	12·88	4·10	1·35	2·58	1·91
Difference in favour of vitamin group	0·05	0·81	0·76	0·03	0·70	0·19	−0·12	−0·25	−0·01
Junior School B									
Vitamin group	1·37	4·87	3·40	1·81	12·65	7·00	1·09	3·05	2·80
Control group	1·67	6·86	4·01	1·91	11·00	5·76	1·07	2·78	2·60
Difference in favour of vitamin group	0·30*	1·99*	0·61†	0·10	−1·65	−1·24	−0·02	−0·27	−0·20
Senior School									
Vitamin group	0·91	3·31	3·61	1·75	4·82	2·75	2·47	5·52	2·23
Control group	0·95	3·40	3·58	1·52	5·78	3·80	2·20	3·91	1·78
Difference in favour of vitamin group	0·04	0·09	−0·03	−0·23	0·96	1·05	−0·27	−1·61	−0·45

* Significant difference. † Nearly significant difference.

Behaviour.—Both the parents and the teachers were asked for their opinion regarding the children's general well-being and behaviour, the former six months after the beginning of the experiment and the teachers throughout the year. The parents were asked to state whether appetite, sleep, nervousness, and tiredness had improved, deteriorated, or remained unaltered. If we consider only those children in whom improvement was recorded for at least two of the four items mentioned, then there was in each school a slightly greater proportion of improvement in children receiving the vitamins (Table VI). The difference between the vitamin group and the control group is greatest in the children from junior school B. However, even this difference is not significant statistically.

TABLE VI.—*Parents' Impressions of Improvement*

School	Vitamin Group			Control Group		
	No. Improved	No. Not Improved	% Improved	No. Improved	No. Not Improved	% Improved
Junior school A ..	82	107	44·2	71	102	41·0
Junior school B ..	107	152	41·2	86	167	34·0
Senior school ..	42	49	46·1	41	53	43·6

The teachers were asked to record each month their impression of any changes in behaviour such as sociability, concentration, and memory. These records were, however, not kept very consistently, and it was difficult to assess them in any detail. All that has been done, therefore, is to note whether there has been any record of definite and maintained improvement in behaviour during the year (Table VII).

TABLE VII.—*Teachers' Impressions of Improvement*

School	Vitamin Group			Control Group		
	No. Improved	No. Not Improved	% Improved	No. Improved	No. Not Improved	% Improved
Junior school A ..	68	118	35·6	44	128	25·6
Junior school B ..	74	129	36·3	54	152	26·2
Senior school ..	32	56	36·4	39	49	44·4

The higher proportion of "vitamin" children in the senior school whose behaviour, according to the teachers, had improved is not statistically significant. On the other hand, the difference in both junior schools is significant.

In both the teachers' and the parents' records the high proportion of children who had apparently been improved by the control pellets is noteworthy, and once again stresses the importance of adequate controls in attempting to assess the value of vitamins in affecting behaviour and general health. It is perhaps worth repeating that neither the teachers nor the parents were aware that the pellets given to half of the children were devoid of vitamins.

Physiological Function.—Following a report by Harper *et al.* (1943) that a short period of feeding with vitamin supplements improved the physiological function of a group of cadets, some of the older children were tested to see whether a similar effect could be observed. The four tests—vital capacity, breath-holding, endurance (R.A.F. 40 mm. mercury test), and the resting heart rate—which the Manchester workers claim were affected were carried out on 178 children in March, 1943; that is, after one year of feeding with vitamin supplements. No difference was observed between the "vitamin" children and the controls (see Jenkins and Yudkin, 1943).

Vitamin C Saturation.—Senior-school boys were tested by the method of Harris and Abbasy (1937). In this method, which is modified from Harris and Ray (1933), daily doses of vitamin C equivalent to 70 mg. per stone body-weight are given at about 10.30 a.m. and the urine is for analysis collected between 2 and 4.30 p.m. The dosing and the urine collection are repeated each day for five days. An excretion of 50 mg. or more in the specimen of urine is taken to indicate saturation.

Altogether, 109 senior-school boys were investigated, of whom 22 were 11 and the remainder 12 years old. Since some of the boys were absent during the week of the test, complete records were obtained on only 95 subjects. Of these, 45 had been taking the vitamin pellets and 50 the control pellets. The average number of days to reach saturation was 1.84 in the vitamin group and 2.59 in the control group. The proportion of boys reaching saturation on each of the five days is shown in Fig. 6.

Dietary vitamin C tends to be lowest in spring and early summer, when green vegetables are difficult to obtain (Harris and Oliver, 1943). The fact that the control group was saturated in as short a time as 2½ days (average) indicates that the intake of vitamin C of these children was higher than that of other groups of children studied in the spring during the war (see, for example, Harris, 1942). This is no doubt associated with the fact that green vegetables were unusually plentiful during the winter 1942–3.

Discussion

Differences in height and weight have often been reported in children from different classes; thus, children from public schools are heavier and taller at a given age than children from elementary schools. But that differences in height and weight, and incidentally also in dynamometer readings, should exist between children of different elementary schools in the same town seems worthy of note, especially in a town like Cambridge. Cambridge is comparatively prosperous, and one would certainly not regard it as a town in which to observe widespread poverty or malnutrition. Severe or even moderate rickets, for example, is rare in Cambridge. And, as we have said, the average height and weight of the children as a whole compare favourably with those of most towns in Britain. That

the differences are due to economic factors is supported by a study of the relation between nutritional status and family size (Yudkin, 1944a) and by the results of an investigation of children from industrial areas (Yudkin, 1944b).

Limiting Factors in Nutritional Deficiency.—The absence of effect of vitamin or other nutritional therapy is not necessarily an indication that the diet was completely adequate in these essentials (Yudkin, 1943, 1944c). Let us consider the results of

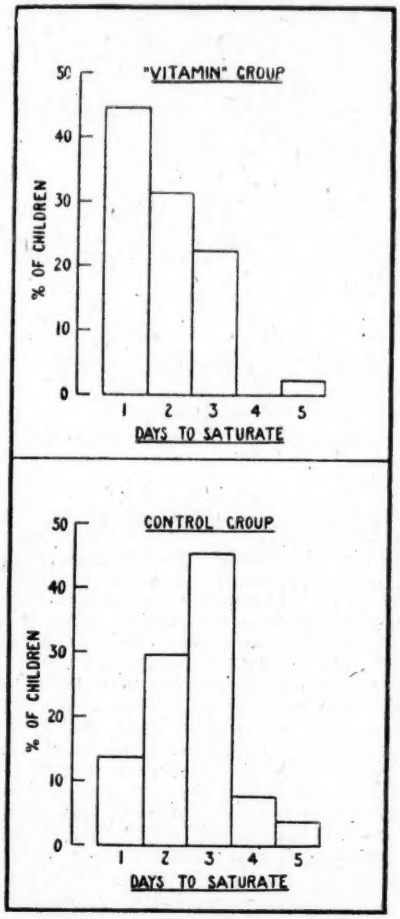

FIG. 6.—Vitamin C saturation tests.

the Cambridge vitamin investigation from this point of view. Apart from the improvement in vitamin C saturation, which is simply an index of past vitamin C intake, the supplements effected an improvement only in respiratory illness and in general behaviour as assessed by the teachers. The fact that no improvement was produced in height, weight, haemoglobin, etc., even in children from the poorer school, does not mean that these are unaffected by vitamin A, B_1, C, or D. It might mean, of course, that the diets of the children supplied adequate quantities of these components. On the other hand, it might mean that the diets were deficient in other essentials in addition to these vitamins and that one or more of these other essentials was the limiting factor in growth, haemoglobin formation, and so on. An animal showing suboptimal growth on a diet slightly deficient, for example, in protein, calcium, and vitamin A will not be made to grow normally by the administration of only one of them. On the other hand, a similar degree of suboptimal growth caused by deficiency of, say, vitamin A only, will be restored to normal by an increase in this factor alone.

Summary

The nutritional status of about 1,100 Cambridge school-children, determined in Jan. and Feb., 1942, was found to compare favourably with that reported for children in other parts of the country. Nevertheless, in the Cambridge children appreciable differences were seen between those living in a poorer area of the town and those in a better-class area. Compared with the latter, the children from the poorer area were on the average 0.8 in. shorter, 2.6 lb. lighter, had 2% less haemoglobin, and a grip about 1.25 kg. weaker, and showed more changes in conjunctival epithelium.

Most of the children were re-examined in Jan. and Feb., 1943. The average heights and weights were slightly greater than for children of the same age examined a year previously; in other respects no change was seen. It may be said, therefore, that no deterioration in the diets of these children had occurred between the third and fourth years of the war.

Since Feb., 1942, half of the children have been receiving vitamin pellets at school; allowing for absences and school holidays, they were thus being given a supplement containing approximately half the daily requirements of vitamins A, B_1, C, and D. The other half of the children received control pellets containing no vitamins. After a year no effect was seen in the gain in height and weight, haemoglobin, strength of grip, dark-adaptation, resting pulse rate, vital capacity, breath-holding time, or endurance measured by the R.A.F. mercury test. There was, however, an improvement in vitamin C saturation, a decrease in the incidence and duration of colds, and an improvement in school behaviour as assessed by the teachers.

It is pointed out that the absence of effect on growth, haemoglobin, etc., cannot be taken to imply that these are not limited by nutritional factors.

This investigation would have been quite impossible without the co-operation of the teachers of the Cambridge schools, which was given so generously and for which I am very grateful. My thanks are due also to Dr. J. A. Smyth, medical officer of health for Cambridge, Dr. Janet Laidlaw, Mrs. Elsie Walton, my wife, and the many friends who have helped so willingly in the collection and analysis of the results.

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NUTRITION AND SCHOLASTIC ATTAINMENT

BY

I. F. MacKENZIE, M.B., D.P.H., D.T.M.&H.

Deputy County Medical Officer, Herefordshire

A measure of far-reaching significance which was placed on the Statute Book in 1906 was the Education (Provision of Meals) Act. This Act granted powers enabling Education Authorities to provide meals for children in attendance at public elementary schools who were " unable by reason of lack of food to take full advantage of the education provided for them."

The inquiries of Rowntree (1900) in the city of York and the Report of the Interdepartmental Committee on Physical Deterioration (1904) had revealed that many children received quite insufficient quantities of food and that a condition of semi-starvation was rife. School-children were particularly affected, and it was recognized that the lack of food produced a condition of mind and body which made educational progress extremely improbable. Thus the ultimate object of the Act was the promotion of education among the poorer sections of the community; and it is probably correct to say, from a study of the antecedents, that the means to attain this end which those who framed the Bill had in mind was the prevention of actual hunger rather than the correction of defective nutrition.

Nowadays conditions have so changed that persons living at a correspondingly low economic level are no longer encountered. On the other hand, an enormous amount of defective nutrition, due principally to a long-continuing deficient intake of essential nutrients, exists among children of school and pre-school age. Reliable evidence of this has accrued during the last few years

through numerous investigations which need not be cited in this paper.

The question which arises at this juncture is, To what extent, if at all, does malnutrition interfere with the educational progress of a child? In other words, do the various factors which culminate in malnutrition have an adverse effect on the functioning of the brain? This point is of particular interest at the present time when plans are being formulated for reform of the educational system with a view to raising the educational level of the community. If it can be established that malnutrition reacts unfavourably on scholastic progress it is pertinent to ask if the full benefit of educational reform can be achieved without a concurrent and properly organized attempt to reduce further, or eliminate altogether, defective nutrition in school-children.

Findings in Other Investigations

References in the literature to the effects of malnutrition on educational status are not numerous, but almost without exception they stress the importance of this condition as a cause of scholastic retardation. For example, Baldwin (1922) deduced from his investigations into the physical and mental growth of children that, on the average, the well-grown, well-nourished child is generally superior in its school record to the smaller child of the same age. In another investigation, in which 423 children were examined by group intelligence tests and graded physically, it was shown that 52% of the group with the highest intelligence scores had no physical defects (Sandwick, 1920). When a considerably larger group of 4,558 children was surveyed a clear correlation was established between "intelligence" and the state of the health (Pearson, 1923). A more recent statistical study of the physique of elementary-school children with special reference to their mental ability was recorded by Habakkuk (1926). He examined the records of 3,914 boys and girls aged 7 to 12 years in South Wales, and came to the conclusion that the most backward were the shortest and the most advanced the tallest. A similar attempt to correlate physical development and intelligence was undertaken in Glasgow (Dawson, 1931). The evidence obtained was such that it could be maintained that the taller children were more active mentally. In this connexion it should be stressed that there is general agreement that height is a much better index of the nutritional state than is weight. The investigations of the authors of *Genetic Studies of Genius* (Terman *et al.*, 1926) make it clear that genius and exceptional brilliance are associated with, and are probably dependent upon, a sound physique; and, to a certain extent also, upon the superabundant energy which good health promotes.

Emerson (1922) believes that though malnutrition does not cause mental deficiency it may give rise to mental retardation; while Orr (1941), in the same connexion, said that "the power to use intelligence depends upon the state of the health."

A different approach to the problem was taken by Leighton and Clark (1929). Their Scottish experiment, which involved 1,425 children of from 5 to 13 years of age, demonstrated that those who had been given a regular extra ration of milk were noticeably more alert and boisterous than the control group, which had not had extra milk. The authors stated that teachers remarked on the altered demeanour and behaviour of the boys. A somewhat similar response to an extra ration of milk was described by Corry Mann (1926). The test boys were obviously more fit and were much more high-spirited.

Present Investigations

The line of approach to the problem adopted in the present inquiry is based on the view that consistent and sympathetic observation in his class in school enables a teacher to detect quite slight deviations from the normal ability to understand and memorize, as well as permitting him to pick out those children who, without being necessarily less intelligent, are, nevertheless, not so receptive and alert mentally. It will be generally admitted that a teacher who has had considerable experience in the handling of children is usually in a position to make valuable comment on a child who has been observed in class for months or more.

An opportunity presented by a nutrition survey in a group of public elementary schools was utilized to ascertain if any evidence along this line could be secured and if my assessment of the nutritional state bore any relation to the estimate of the teacher on the response of the child in class. Each teacher chose the pupils who, in his opinion, were the brightest and those who were slow in comparison with the class average. Classes for children under the age of 8 years were excluded from the inquiry, so the selected individuals were of varying age above 8 to school-leaving age. Children who were backward because of inherent mental defect or because of physical disability had been ascertained and provided for earlier, and the children under inquiry were therefore regarded as being of normal intelligence. The broad social and environmental conditions were identical in the case of all children. The nutrition assessment was made on the findings of a clinical examination which followed that recommended by the League of Nations Health Organization (1938), and the classification used is that sponsored by the Board of Education (1934).

Results of the Investigation

(*a*) *Total Figures.*—In Table I the numbers of bright and slow children in each of the four nutrition grades, and the respective percentages, are set out.

TABLE I

Category	Nutrition A (Excellent)		Nutrition B (Normal)		Nutrition C (Slightly Subnormal)		Nutrition D (Bad)	
	No.	%	No.	%	No.	%	No.	%
Bright (355)	100	28·2	235	66·2	20	5·6	0	—
Slow (357)	24	6·7	251	70·3	79	22·1	3	0·9

A total of 712 children (355 bright and 357 slow) were subject to inquiry. Out of 355 bright children 100 (28.2%) were Nutrition A and 20 (5.6%) were Nutrition C. The remaining 235 children were classified as Nutrition Grade B. In the case of the slow children the number whose nutritional status could be passed as Grade A was 24. This was 6.7% of the group. On the other hand, 22.1% (79 children) of these 357 slow children were of slightly subnormal nutrition, and were graded C. In addition, the three cases of bad nutrition (Grade D) were among the mentally slow children. The remainder of the group—that is, 215 children (70.3%)—were of normal nutrition, and were classified as B. It is of interest to note that the relative proportions of A and C children in the bright and slow groups are to all intents and purposes reversed. Over 20% of the bright children and some 6% of the dull children were Nutrition A, whereas Nutrition C cases among the slow children amounted to over 20% of the whole group, and the much smaller figure of 5.6% represents the Nutrition C cases among the children found to be bright.

(*b*) *Data for Boys and Girls Separately.*—Figures relating to sexes separately were prepared, and some interesting results were obtained. The data are set out in Table II. A total of 583 children (280 boys and 303 girls) from the group considered under (*a*), above, were reviewed.

TABLE II

Sex	Mental Activity		Nutrition Grades A	B	C	D	Totals
Boys (280)	Bright	No.	28	72	8	0	108
		%	26·0	66·6	7·4	—	—
	Slow	No.	12	126	32	2	172
		%	7·0	73·2	18·6	1·2	—
Girls (303)	Bright	No.	57	125	8	0	190
		%	30·0	66·0	4·0	—	—
	Slow	No.	6	77	30	0	113
		%	5·3	68·1	26·6	—	—

With regard to the relative position of the sexes, 26% of the bright boys were Nutrition A and 7.4% were Nutrition C, whereas 30% of the bright girls were graded A and 4% graded C. Only 7% of the slow boys were included in Nutrition Grade A, and there were 18.6% in Grade C; whereas in the case of the girls 5.3% were Nutrition A, but the much higher proportion of 26.6% were graded C. In other words, of the bright children graded Nutrition A, 26% were boys and 30% were girls; that is, there was a 4% difference in favour of the girls. On the other hand, slow children graded Nutrition C amounted to 18.6% of the boys and to as many as 26.6% of the group of girls.

Discussion

A natural assumption from the data recorded above is that a correlation exists between nutrition and scholastic attainment. The evidence would appear also to indicate that a condition of

subnormal nutrition can constitute a serious handicap to the educational advancement of a child. A further inference from the data is that the mental activity of girls is even more closely related to their general physical state than is that of boys.

It may be contended that these deductions are not valid, inasmuch as parents of low intelligence not only beget children with a poor mental capacity but, in addition, cannot accord these children proper and sufficient care, with the result that malnutrition arises. In this way, it could be argued, the children who are mentally slow and who also suffer from malnutrition can be accounted for. Though this sequence is undoubtedly of not infrequent occurrence, yet only a comparatively small proportion of the cases in any one area could be accounted for on this basis. Moreover, the investigations of Corry Mann (already cited) are particularly significant in this connexion, in that he found that the boys in the group receiving supplementary milk, whose nutritional condition was thereby raised above that of the other groups, were more high-spirited and active. The same observation has been made in school dining centres provided for children with defective nutrition. The inference is that the malnourished child who has been labelled "slow" may, as a result of corrected dietetics and improved nutrition, attain to an ability to use his mental powers equivalent to that enjoyed by his better-nourished school-mate.

It is evident that further light on this aspect of the nutrition of children will be of value particularly to those interested in educational advancement.

Summary

The nutrition grades of 355 bright and 357 slow children were investigated. Of the bright children 28.2% were graded Nutrition A and 5.6% graded Nutrition C. Only 6.7% of the slow children were Grade A, while 22.1% were graded Nutrition C. The 3 instances of Grade D children were found in the slow group.

Of this group 583 members were arranged according to sex. Of the bright boys 26% were graded A and 7.4% were graded C, the corresponding figures for the girls being 30% and 4% respectively. In the case of the boys who were regarded as slow, 7% were Nutrition A and 18.6% were Nutrition C, whereas 5.3% of the girls in the slow category were Nutrition A and 26.6% were Nutrition C.

I am indebted to Dr. John Stokoe, whose keen interest in matters connected with nutrition was a stimulus to inquiry.

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KOILONYCHIA AND ITS RECOVERY IN CASES OF THYROTOXICOSIS

BY

LORNA COOKE, M.B., B.S.

AND

STELLA M. LUTY, M.B., B.S.

University College Hospital

So much emphasis has in recent years been thrown upon the relation of koilonychia to the anaemias, and especially to hypochromic anaemia, that it may be of value to record two cases and to comment that in neither was there any reason for supposing iron metabolism to be at fault.

Case I

Mrs. A., aged 69, was admitted to hospital on May 11, 1943, complaining of nervousness, palpitations, abdominal colic, and loss of weight of two years' duration, and of general tiredness and staring eyes for three months. On examination she was found to be emaciated, nervous, and very excitable. She had diffuse brown pigmentation of the skin of the neck and of both upper eyelids. The prominence of her eyes was associated with conspicuous lid retraction on both sides—retraction so great that her eyes closed incompletely during sleep. The left cornea had a small abrasion. The thyroid was firm, both lobes and the isthmus being easily palpable and definitely enlarged. There was no retrosternal dullness. The outstretched hands showed a fine tremor; regular tachycardia of 100 to 110 persisted during the day and declined little at night. The cardiovascular system showed no abnormality apart from the tachycardia, and the other main systems seemed to be normal. The tongue was dry, brick-red, and fissured, but not sore. Her red blood cells numbered 4,800,000 and her haemoglobin was 81%. On admission the hands were persistently cold and blue—an unusual feature in thyrotoxicosis. The nails were brittle, conspicuously spoon-shaped, longitudinally striated, and cracked. She said that they had been in this state for about six months. The skin surrounding the nail, and especially at its base, was dry and scaly, and was encroaching upon the actual nail itself in an irregular manner. The free margin of the nail bed, instead of showing the normal clear-cut line of demarcation, was irregular.

Her stay in hospital was prolonged owing to the development of various complications. Soon after admission an acute respiratory infection was treated successfully with sulphathiazole. At that time the patient was having 30 minims of Lugol's iodine daily, and at the end of the course, which coincided with the end of the respiratory infection, her pulse rate during the day was 80 to 90 and at night 80, with definite diminution of other thyrotoxic signs. During July she developed a large bed-sore and a suppurative parotitis, from which she recovered. Despite these infections her general health improved steadily, and it was noticed at the time that the condition of her nails was altering and that growth was now occurring normally, the scoop being pushed onwards (Fig. 3). The skin around the nails had become more normal and the pulp was more rounded. There was no further cracking of the nails. By August she had gained a stone in weight; her red blood cell count was 5,010,000 and Hb 98%. Her basal metabolic rate was + 61%.

During September she developed another acute respiratory infection, which was treated with sulphathiazole, and also a severe conjunctivitis with corneal ulceration after a short course of thiourea. Nevertheless her general condition continued to improve steadily and her weight was increasing. Her pulse rate was in the region of 80 to 90 both day and night; her basal metabolic rate was + 48%. On Oct. 1 her red cells were 4,690,000 and Hb 84%—values similar to those on admission. The normal growth of her nails continued, and as they grew they soon became perfectly formed and clear-cut at their margins, brittleness being lost (Fig. 4). She had gained nearly 2 stone more in weight.

Recovery of Nail Growth in Case I

The nails in Fig. 2 seem shorter than in Fig. 4. This apparent shortening was due to the skin clinging to the base of the nail and being carried onward with it. The extent of this skin encroachment could be ascertained by measuring from the V-shaped crease of skin to the nearest part of the exposed nail in Fig. 4 and transferring this measurement to Fig. 2. This is shown in the outlines of Fig. 1: the nail is at least as high up the finger as the dotted line of the right-hand tracing. It is important to fix this, the growing root of the nail, as accurately as possible if we are to ascertain the time at which growth

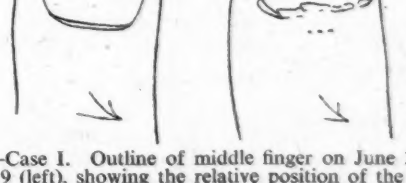

FIG. 1.—Case I. Outline of middle finger on June 21 (right) and July 19 (left), showing the relative position of the proximal edge of the scoop, the root of the nail, and a V-shaped crease in the skin over the distal interphalangeal joint. Used to estimate the date at which formation of deformed nail ceased. Drawings made from Figs. 2 and 3.

changed from normal to abnormal. The position of the proximal margin of the scoop can be fixed relative to a given skin crease in Figs. 2 and 3 and, through this, to each other. In this middle finger it moved onwards by 5 mm. in four weeks; and the rate at which the scoop grew onward in the index finger was the same. In Fig. 2 the growing root of the nail lies about 9 mm. above the proximal margin of the scoop. It

would seem, therefore, that the arrest of abnormal growth must have occurred about seven weeks before Fig. 2 was taken—a date about April 1, or six weeks before the patient entered hospital. It may have been a little more or less. Special inquiry showed that the patient was continuously at home with her family between June, 1942, and May, 1943, and that during

FIG. 2.—Case I, June 21. Fingers 2, 3, and 4 of right hand, showing spoon-shaped nails. Note broken skin near root of nail—dry, and attached to nail and drawn onward by its growth.

FIG. 3.—Case I, July 19. The same fingers, showing growth of well-formed new nail; the scooped nail is growing off.

FIG. 4.—Case I, Nov. 15. The same fingers, with well-formed nails.

that period, though ailing, she refused to see a doctor and took no medicine of any kind. No iron was given to her during her stay in hospital. It seems very difficult in these circumstances to associate the koilonychia with an iron deficiency, clearing up, as it would be necessary to suppose, during the end of the period of her home life. Moreover, her blood counts gave no encouragement to this idea.

The case serves to stress the importance of noticing in cases of koilonychia, when first seen, how close to the root of the nail the scoop comes, and the rate of nail growth, in attempting to correlate the scoop with clinical events. The factors bringing about faulty growth are not necessarily present when the deformity is first seen; they may have ceased to operate many weeks previously.

Case II

Mrs. B., aged 59, was admitted to hospital on Jan. 25, 1944, showing symptoms and signs of severe thyrotoxicosis. She complained of extreme nervousness for three years, and palpitations, staring eyes, and loss of weight for six months. On examination she was found to be thin, flushed, sweating, and very nervous. Her prominent eyes showed marked lid-retraction, up to 5 mm. of the sclerotic being exposed above the pupil and 3 mm. below. The lids failed to shut during sleep. The thyroid showed a definite, firm, even, pulsatile enlargement of the whole gland. The heart was slightly enlarged, and presented a regular tachycardia which decreased during sleep, a soft systolic apical murmur, and an accentuated aortic second sound. Her pulse was conspicuously water-hammer in character, and there was capillary pulsation. The blood pressure was 200/100 mm. Hg. A fine tremor shook the extended hands and all reflexes were brisk. The tongue was smooth, fissured, and bright red, but not sore; there were sordes at the corners of the mouth.

The finger-nails were deformed and had been spoon-shaped, thin, and brittle for about three months. The nails affected were those of both forefingers and, to a lesser extent, the right middle finger; the remaining nails were thin, brittle, and longitudinally striated, but showed no scoop. The skin at the base of the nail was dry and adherent for 2 or 3 mm., producing apparent shortening of the nail, as in the last case. The free nail margin was broken, and was irregular in thickness. The obvious concavity of the nail of the index finger extended up to the adherent skin.

Her basal metabolic rate two days after admission was + 138 and her blood count showed 5 million red cells and 6,000 white cells, which remained constant throughout her two months' stay in hospital. Weekly haemoglobin estimations showed a variation between 90 and 98%. A fractional test meal showed a normal acid curve.

For the first fortnight in hospital the patient was treated with rest in bed only. During this period her pulse rate subsided from 110 to 90 a minute with a slight general improvement. Thiourea 1 g. three times a day was begun early in February. Five days later she developed severe conjunctivitis, which subsided in eleven days after the change to thiouracil 0.2 g. five times a day. Apart from this complication her general improvement continued steadily. This was shown by her calm behaviour and lack of apprehension, a fall in the pulse rate, and a conspicuous decrease in the exophthalmos and lid-retraction. Her basal metabolic rate decreased in five estimations steadily down to + 15 and her weight increased by nearly a stone in two months. Her finger-nails gradually became normal; the brittleness disappeared, they became thicker and more unyielding, the dry skin at the base of the nail receded, and the scoop gradually grew off.

The dose of thiouracil was reduced, the patient being discharged on April 1, 1944, on 0.2 g. daily.

Recovery of Nail Growth in Case II

In this case the nail of the index finger was at first concave over almost its whole surface. Some weeks elapsed before, as the nails began to grow properly, the upper margin of scoop could be defined clearly. It was marked by staining it with a line of nitric acid, and its rate of onward movement was determined relative to the distal edge of the nail bed. On March 11 the distance was 8 mm., on the 25th it was 6 mm., on April 13 it was 4 mm., and on May 11 the line had just grown off. Thus the growth was regular, and at a rate of about 1 mm. a week. Now, the distance of the nitric acid mark from the root of the nail on March 20 was 6 mm.; and thus it may be calculated that normal growth began weeks earlier—namely, about a week after admission, a little more or less. Close inquiries showed that the patient had used nothing in her household duties, such as washing soda, that could be held to account for the condition of her nails on admission. She had taken no iron before admission, and was given none while in hospital.

Discussion

Discussion must be short because our observations on these two cases still leave the cause of koilonychia obscure. A brief inquiry into past records is enough to show that the spoon-shaped nail occurs under distinct circumstances, that it may be

hereditary or acquired, temporary or permanent, and that it has been described in conjunction with various factors, local and general, thought to be of possible significance. Among other conditions we find thyrotoxicosis named more than once (Heller, 1927; Rossegger, 1936); curiously, thyroid deficiency has also been blamed (Schönstein, 1929). Reference may be made to the useful general accounts of Heller (1927), Cipollaro (1930), and Rossegger (1936).

The other chief point we desire to stress is that, in temporary koilonychia, attempts to associate the nail change with any particular factor should take into account the abruptness with which the nail growth may lose its abnormality, while the change in the nail, which has been the result of earlier abnormal growth, may continue to be shown for many weeks or perhaps months. Thus it is clear that the presence of a concave surface does not mean that the process responsible for it is still active; indeed, when the concavity is at the distal end of the nail it is probable that the cause has been for a long time in abeyance—a fact to which Toegel (1937) draws attention in his case which followed brief exposure of the nails to benzene.

Our thanks are due to Sir Thomas Lewis for his assistance with these cases, and to Prof. H. P. Himsworth and Dr. Kenneth Harris, of University College Hospital, for permission to use the case reports.

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HISTOLOGICAL EFFECT OF INJECTION OF MEPACRINE (ATEBRIN) DIHYDROCHLORIDE*

BY

FRANK HAWKING, D.M.

(From the National Institute for Medical Research, London)

Recently a note was published (Hawking, 1943) concerning the histological effects produced by the intramuscular or subcutaneous injection of mepacrine methanesulphonate (atebrin musonate). However, the preparation most commonly issued for injection in the Army is the dihydrochloride (atabrine dihydrochloride). An investigation has therefore been made to see whether the effect of the dihydrochloride is significantly different from that of the methanesulphonate, and the opportunity has been taken to compare both of these preparations with quinine dihydrochloride, which is the preparation of quinine most commonly recommended for injection.

A 4% solution of quinine dihydrochloride has a reaction of *p*H 3.08. A 10% solution of mepacrine methanesulphonate has a reaction of *p*H 4.0; and one of 5%, *p*H 4.24; a 3.3% solution of mepacrine dihydrochloride has a reaction of *p*H 4.40. All these reactions were measured at 17° C. There is consequently no substantial difference in the acidities of the two solutions of mepacrine, and both are somewhat less acid than that of quinine dihydrochloride. The chief physical disadvantage of mepacrine dihydrochloride lies in its lower solubility. The methanesulphonate is soluble in water up to 33%, but the dihydrochloride only up to about 3.3% at 17° C. To obtain a 10% solution the mixture must be cautiously warmed to about 50° C. (decomposition occurs on boiling), and then the solution is cooled to 37° C. and injected without delay.

Technique

Mepacrine dihydrochloride (atabrine dihydrochloride, Winthrops), 43 mg. in 0.5 c.cm. of warm water, or mepacrine methanesulphonate (May and Baker), in equivalent amount (50 mg.), was injected intramuscularly into the thigh or loin of rabbits; some injections were also made subcutaneously on the abdomen. Similar injections of quinine dihydrochloride (Howards), 20 mg. in 0.5 c.cm., were given to other rabbits: in the previous work it had been found that the toxic action of 20 mg. of quinine was approximately equal to that of 50 mg. of mepacrine. The animals were killed at suitable intervals (1 to 10 days); the sites of injection were fixed in formalin and studied by the usual histological technique. Altogether mepacrine dihydrochloride was injected into 11 sites intramuscularly and 4 sites subcutaneously, and mepacrine methanesulphonate into 4 sites intramuscularly. Quinine dihydrochloride was injected into 7 sites intramuscularly and 3 sites subcutaneously.

A parallel series of observations were made with rats: 4.3 mg. of mepacrine dihydrochloride in 0.3 c.cm. of water was injected intramuscularly into the thigh and subcutaneously on the abdomen, respectively, in 8 sites of each type; 5 mg. of mepacrine methanesulphonate was injected intramuscularly and subcutaneously into 3 sites of each type; and quinine dihydrochloride 10 mg. in 0.3 c.cm. of water was similarly injected into 8 sites of each kind. The dose of quinine was twice that of the mepacrine, since the therapeutic dose of quinine (0.6 g.) is usually at least twice that of mepacrine (0.3 g.).

Experimental Results

Naked-eye Appearances.—When mepacrine dihydrochloride was injected into the lumbar muscles of rabbits a fusiform lesion was produced about 4 cm. in the long axis of the muscle, by 2 by 1 cm. The lesion, on section, was dark red surrounded by a narrow yellow or whitish zone (leucocytes). In the thigh the connective tissues along the sciatic nerve were usually swollen, and often there were haemorrhagic patches in the adjacent muscles, but the appearances were less regular than those in the loin. The thigh is much less suitable than the loin for observing the effects of intramuscular injection, since so many fascial planes are present that the injected material is deposited chiefly in the connective-tissue spaces between the muscles rather than inside the muscles. In the thigh of rats there was occasionally some yellowness and oedema of the connective tissue around the chief vessels and nerves, and in one animal killed after seven days there was contracture of the muscles; but on the whole the macroscopical changes were inconspicuous. The lesions produced by mepacrine methanesulphonate were indistinguishable from those described above, and so were those produced by quinine dihydrochloride (apart from the absence of any yellow staining).

When mepacrine dihydrochloride or methanesulphonate was injected subcutaneously it caused great thickening of the skin, extending 4 to 9 cm. and due to yellow gelatinous oedema of the deep connective tissue; later a hard necrotic scab was formed. With quinine dihydrochloride the swelling was less marked and there was no yellowness.

Since mepacrine is strongly fluorescent some of the animals were examined under ultra-violet light; diffuse yellow fluorescence was seen in the tissues around the site of injection, especially subcutaneously, but the distribution could not be definitely mapped out by this method.

Microscopical Appearances.—When mepacrine dihydrochloride was injected into the compact muscles of the loin an area of coagulative necrosis with haemorrhage was produced, as described above. A short distance inside the margin of this area there was a zone of disintegrated leucocytes (seen macroscopically as a yellow band), but the necrosis extended outside this zone, and the demarcation between necrotic and living muscle was initially indistinct. After some days there was a second cellular reaction at the demarcation line, and in 10 days a definite layer of granulation tissue was formed in which were embedded shrunken muscle fibres, a few giant cells, and new collagen. In the looser tissues of the thigh the main reaction occurred in the intermuscular connective tissue, which was initially greatly distended with fluid and infiltrated with polymorphs and mononuclears. Haemorrhages and collections of albuminous exudate were also present, and most of the tissue appeared necrotic. The superficial layers of the adjacent muscles were necrotic to a variable depth and the connective tissue inside the muscle often contained fluid and leucocytes; haemorrhage was sometimes present. After from 3 to 7 days some of the necrotic muscle fibres became calcified, and the necrotic areas were separated from the healthy tissue by a zone of young granulation tissue containing many mononuclear cells. In the thighs of rats the appearances were similar. The lesions caused by mepacrine dihydrochloride were indistinguish-

*Report to the Malaria Committee of the Medical Research Council.

able from those caused by the methanesulphonate, which were described in the previous note and which were confirmed in the present work. The lesions produced by quinine dihydrochloride could not be definitely distinguished from those due to mepacrine; at the margin between the surviving and the swollen coagulated muscle fibres, groups of shrunken basophilic fibres were found, but these also occurred to a less extent in some of the sections of tissue with mepacrine. The necrosis produced in the loin by 20 mg. of quinine was not quite so extensive as that produced by 43 or 50 mg. of mepacrine, but that produced by 10 mg. of quinine in the thigh of rats was not conspicuously greater than that due to 4.3 or 5 mg. of mepacrine.

When mepacrine dihydrochloride or methanesulphonate was injected subcutaneously into rabbits or rats it caused necrosis of the epidermis, subcutaneous layer of muscle, deep connective tissue, and part of the muscle of the abdominal wall. The deep connective tissue was greatly distended with fluid and contained variable numbers of cells; at first these were principally polymorphs, but after a few days mononuclears predominated. By seven days the necrotic area was surrounded by a zone of granulation tissue. With subcutaneous injections of quinine dihydrochloride (20 mg.) the oedema, necrosis, and cell infiltrations were somewhat less extensive than with mepacrine (43 mg.). In rats 10 mg. of quinine caused somewhat less swelling and cell infiltration than 4.3 mg. of mepacrine, but the necrosis was equally extensive.

Pieces of tissue injected with mepacrine were fixed in formalin, cut as frozen sections, and examined on a fluorescence microscope. The necrotic muscle fibres shone bright yellow; connective tissue and the outer coat of blood vessels from the areas of necrosis shone a little; other tissues were hardly visible.

Discussion

From the above experiments it is clear that there is no difference in the local toxicity of mepacrine dihydrochloride and that of mepacrine methanesulphonate, although methanesulphonate is more convenient to use owing to its greater solubility. The necrosis caused by mepacrine is indistinguishable in type from that caused by quinine dihydrochloride. The relative amounts of necrosis which will be produced in man by therapeutic injection of the two compounds are difficult to predict from animal experiments, since the size of the lesion is not proportional to the dose. As described above, when given by intramuscular injection 43 mg. of mepacrine caused somewhat more necrosis than 20 mg. of quinine; but the necrosis produced by 4.3 mg. of mepacrine injected into the thigh of rats was not conspicuously less than that produced by 10 mg. of quinine. When injected subcutaneously into rats, 4.3 mg. of mepacrine produced more swelling and cellular reaction than 10 mg. of quinine did, but the necrosis was no more extensive. Since the therapeutic dose of mepacrine by injection is only one-half to one-third that of quinine, it is probable that the necrosis produced by intramuscular injection of mepacrine will be less extensive than that produced by quinine; and this conclusion agrees with the clinical reports reviewed in the previous paper. Nevertheless it is clear that the local damage produced by intramuscular injections of mepacrine is far from negligible.

Mepacrine given by intramuscular injection is rapidly absorbed. As concluded in the previous note, the damage caused is not sufficient to contraindicate its use if the patient's life or health is in danger, but it is great enough to make this method of administration inadvisable if the patient can possibly take the compound by mouth. Intravenous injection of mepacrine has been found in American experience to be dangerous to life, and its use has been condemned. Subcutaneous injection of mepacrine is not recommended under any circumstances; it was included in the present experiments for technical reasons as being a sensitive method of displaying the effect of injected substances upon the tissues.

Summary

The histological effect of intramuscular and subcutaneous injection of mepacrine dihydrochloride (atabrine dihydrochloride) in rabbits and rats was compared with those of mepacrine methanesulphonate and of quinine dihydrochloride. Mepacrine dihydrochloride has the same acidity in solution as the methanesulphonate, but it is less soluble (solubility 1 : 30 at room temperature) and therefore slightly less convenient to use; the local toxicities of the two compounds are indistinguishable one from another. The injection of therapeutic doses of mepacrine produces necrosis of the tissues around the site of injection; this necrosis is identical in type with that produced by the injection of therapeutic doses of quinine dihydrochloride, but it is probably somewhat less extensive.

It is considered that mepacrine dihydrochloride is suitable for administration by intramuscular injection, although it is less convenient than mepacrine methanesulphonate; but this route should not be used if it is practicable to give the compound by mouth. Mepacrine should not be given by subcutaneous or intravenous injection.

Grateful acknowledgments are due to Mr. F. J. Higginson for the histological preparations.

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STERILIZATION OF THE SKIN BY COLOURLESS FLAVINE (5-AMINO-ACRIDINE)

BY

VICTOR BONNEY, M.S., M.D., B.Sc., F.R.C.S., F.R.A.C.S.

AND

H. SANDEMAN ALLEN, O.B.E., M.B., B.Ch., F.R.C.S.

In the *British Medical Journal* of May 18, 1918 (p. 562), one of us (V. B.), in conjunction with Carl Browning, introduced a new antiseptic solution which we named violet-green (sometimes known as "Bonney's blue"), for sterilizing the skin; this, because it was entirely non-irritant, could be applied in strength for many hours without harming the skin. The bacteriological investigations then undertaken showed that, to sterilize the skin completely, the time over which the antiseptic can be applied is even more important than its absolute bactericidal power; or, in other words, more effect is obtained from a bactericide of moderate potency which can be applied for a long time than from one whose potency is of a very high order but which, on account of its effect on the skin, can be applied for only a very short time. Violet-green, however, combined high bactericidal power with non-irritancy and therefore amply filled the bill, and since its introduction it has been extensively used not only in surgery and obstetrics but in dermatology as well. It has, however, been objected against it that it intensely stains the bed-linen of the patient and the hands of the nurses. This is true, particularly when one is unaccustomed to its use. On the other hand, applied to the vagina, the staining is a great advantage when—as, for instance, in total hysterectomy—that canal has to be opened from above, for the deep coloration defines it very clearly.

The recent production of colourless flavine* (5-amino-acridine) suggested to one of us (V. B.) the making of a solution similar to violet-green, but containing, instead of 1% of equal parts of crystal violet and brilliant green, 1% of colourless flavine, in the same solvent—namely, equal parts of rectified spirit and water. The presence of water appears to be, in general, a necessity for the full development of antiseptic action; and, in connexion with that requirement and the pale yellow powder with which this paper is concerned, an analogy may be drawn between it and another and very homely yellow powder, called mustard, which, pungent and tear-provoking when mixed with water, can yet as a dry powder be placed on the tongue without any taste or discomfort. The spirit is added to counteract the grease of the skin, which checks a purely watery solution from spreading itself and delays absorption.

It should be noted that colourless flavine is not really colourless, but has a pale lemon tint, which just stains sufficiently to show the limits of its application—a very desirable property in any antiseptic used for the skin. To make the solution, the flavine is first dissolved in the water and then the spirit is added.

Method of Application.—The skin of the operation area, having undergone the usual cleansing, is first painted with the solution and then covered with a piece of double-thickness lint,

* Made by Glaxo Laboratories, Ltd.

soaked to capacity in the solution; this in turn is covered by a sheet of waterproof material and fixed on by a binder or bandage. The compress is applied 6 hours before the operation, and is removed on the operating table.

Bacteriological Tests.—These were carried out on 38 consecutive cases prepared for abdominal section. In each case, when the compress was removed, a platinum loop was made to streak the prepared skin surface and was then streaked on the surface of human blood-agar in a Petri dish. Four such streaks were made from different parts of the prepared area and were streaked on four different areas of the plate. As a control, four similar streaks were taken from an area of skin just outside the prepared area and streaked on the surface of another blood-agar plate. Multiple streaks enable a judgment to be made between growth indicating permanent diffuse infection and growth indicating chance contamination or loop-holes in the preparation.

Results

Prepared Areas.—Of the 38 plates from the 38 prepared areas, 29 showed no growth at the end of four days' incubation and 9 showed growth. Of these 9, one exhibited it on 3 of the 4 streaks, four on 2 of the 4 streaks, and four on 1 streak only. No plate had growth on all 4 streaks. Moreover, the bacterial colonies were few and isolated, except on the plate which showed growth on 3 streaks, and in this case there were other reasons to believe that the preparation had not been carried out thoroughly. As regards the growth on the other plates, these too were probably due to imperfect preparation, though in lesser degree. The effect of the antiseptic, however, is best displayed by comparing the number of sterile streaks with those not sterile; for of the total 152 streaks made from the prepared areas only 15 showed growth. From these the following organisms were identified: *Staph. aureus haemolyticus,* from 9 streaks; non-haemolytic *Staph. aureus,* from 1 streak; and *Staph. albus,* from 9 streaks.

Controls from Unprepared Areas.—All the 38 plates from the 38 unprepared areas showed growth at the end of four days' incubation. Growth occurred on all four streaks in 36 of them, and on three out of four streaks in 2. Counting the number of streaks instead of the number of plates, it is seen that of the 152 streaks made from the unprepared areas 150 showed growth and only 2 remained sterile. The growths in most cases were profuse, and the following organisms were identified: *Staph. aureus haemolyticus,* from 118 streaks; non-haemolysing *Staph. aureus,* from 10 streaks; *Staph. albus haemolyticus,* from 17 streaks; non-haemolysing *Staph. albus,* from 86 streaks; *Str. haemolyticus,* from 1 streak; non-haemolysing streptococcus, from 16 streaks; *Staph. citreus,* from 4 streaks; and diphtheroid organisms, from 30 streaks.

In addition to these tests one of us (S. A.), in order to ascertain the depth to which the antiseptic effect reached, on 13 occasions took cultures from the cut edge of the skin after the incision was made. In 12 cases no growth occurred, but in the remaining case *Staph. aureus haemolyticus* grew. This was the same case in which 3 of the 4 streaks taken from the prepared area showed growth and in which there was a strong suspicion that the area had not been properly prepared.

Discussion

It is to be noted that *Staph. aureus haemolyticus* was by far the commonest organism recovered. It occurred in 35 of the total of 38 plates taken from the unprepared areas, and the frequency on the skin of an organism so potent for mischief gives all surgeons cause to think furiously. The danger to surgical achievement which lurked in unsterilized skin, and the need to abolish it, were taught by the great thinker Lister. Then, in reaction, arose the soap-and-water school, headed by Lawson Tait, which asserted that simple cleanliness was enough: that good surgical results can be so attained is true, for healthy tissues have strong resisting powers. Later still, another school of thought emerged which, recognizing the difficulty of completely sterilizing the skin, employed as the chief line of defence cotton or rubber sheeting to cut out the skin—and this remains the usual practice to-day. But, although the soap-and-water school as such has disappeared, there remain some persons who, believing that swabbing with an antiseptic immediately before the operation sterilizes the skin, unknowingly depend on what its adherents depended on. The bacteriological investigations carried out in connexion with violet-green showed quite conclusively that such brief applications do not effect sterility, though they do enfeeble the organisms so that growth on the agar plate is delayed as compared with that on the controls. Iodine is the best of these perfunctory applications, because it has superior power of penetrating organic material—a quality made use of in the sterilizing of catgut.

Organisms entrenched in the skin are very stout enemies, and to knock them out a vigorous and, above all, prolonged attack is required. Those who do not appreciate this fact ascribe the satisfactory healing of the wounds they make to the perfunctory measures they have taken, though in reality they owe it to that natural tissue resistance which enabled the soap-and-water school to make good its claim. But every now and then the enemy gains a foothold, and failure of the wound to heal kindly leaves the operative result something less than perfect and the surgeon with his pride hurt—and sometimes worse things happen. Surgical success depends on so many factors that the share taken by rigid antisepsis cannot be assessed in figures, though it can be perceived by anyone who studies attentively over a number of years the results of different surgeons practising different degrees of antisepticity. But whatever the share is, everyone must agree that operative infection arising from the skin is a theoretical possibility, and it is the duty of a surgeon to close all doors against all possibilities, theoretical or otherwise. To ensure, as far as may be, initial sterility of the skin should be the first line of defence against infection from the skin, and sheeting the second line, in case the first fails. For those who object to violet-green on the score of staining, the solution we describe, if used in the manner set forth, efficiently and inoffensively sterilizes the skin.

Our thanks are due to the pathological department of Cheltenham Hospital for the work it has done for us.

PITUITARY CACHEXIA TREATED WITH CORTICOTROPHIC HORMONE

BY

R. E. HEMPHILL, M.D., D.P.M.

Medical Superintendent, Bristol Mental Hospital

AND

MAX REISS, M.D., D.Sc.Prague

Department of Endocrinology, Burden Neurological Institute

Panhypopituitarism, not the result of pituitary necrosis following pregnancy, has been regarded as a clinical entity (Fraser *et al.*, 1941). We (Hemphill and Reiss, 1940, 1942) have described cases in which severe melancholic depression associated with clinical pituitary cachexia—namely, emaciation, asthenia, loss of hair, desiccated skin, and low output of 17-ketosteroids—developed after the menopause. Although there was usually evidence of polyglandular insufficiency, where the skin was dry, hair brittle, and 17-ketosteroids low with subjective complaints that the "bowels did not operate," adrenocortical failure seemed the most important endocrine disturbance. On this hypothesis a number of such cases have been treated with corticotrophic hormone. This treatment was on the whole promising, and early results have been recorded already (Hemphill and Reiss, 1940, 1942). The case described below showed such extreme emaciation that the picture was that of advanced Simmonds's disease. Complete physical recovery followed treatment with two courses of corticotrophic hormone. The mental condition cleared up some time later.

Case Record

A woman aged 41 was admitted to the Bristol Mental Hospital on Dec. 21, 1940. She was married, but had never been pregnant. There was no history of antecedent mental or physical illness. The menses ceased abruptly at the age of 39 without hot flushes or other subjective menopausal disturbances. About six months before admission she became depressed, lost appetite, and imagined that her viscera were deranged and the bowels "stopped up"; she attempted suicide. This was the mental condition on admission. Physically she was thin, weak, and frail-looking; height 5 ft. 6 in.,

weight 6 st. 3 lb. The skin was sallow, with an extremely dry "desiccated" texture; sweating was entirely absent, and there was a marked sensitivity to cold. The blood pressure was 90/60 mm. Hg. There were no respiratory, cardiac, or renal abnormalities. The breasts and mons veneris were atrophied; the hair of the head was brittle and lustreless, that of the pubis and axillae scanty; muscle bulk was very much reduced. There was no assayable output of gonadotrophic, corticotrophic (method of Reiss *et al.*, 1936), or thyrotrophic (method of Heyl and Laqueur, 1935) hormones in the total urine of 96 hours; the output of 17-ketosteroids was 2.6 mg. per 24 hours. The patient (Figs. 1 and 2) displayed none of the

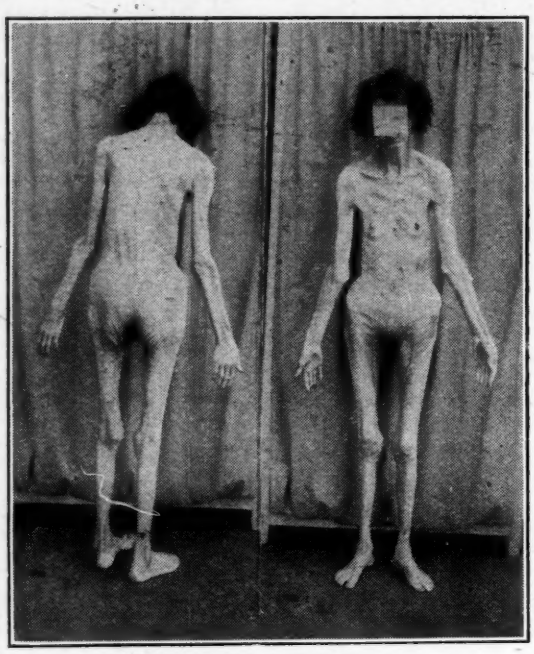

FIG. 1 FIG. 2

restless activity seen in anorexia nervosa. There was a low concentration of intercellular water, as shown by the diurnal electrical resistance of the skin, which, normally now and steady after the menopause (Hemphill, 1942), was high and fluctuated widely. Attempts at fattening failed in the next ten months; the weight dropped to 4 st. 11 lb.

Corticotrophic hormone, 40 sudanophobic units daily for 24 days, was administered. There was an immediate improvement in appetite and some return of the sense of well-being. The desiccated appearance of the skin had gone, and within four days the electrical resistance fell to the normal low level, at which it remained steadily. Two months later a further course of 14 daily injections of 25 units was given. The weight rose steadily and has continued to do so (Fig. 3). It is now two years since any hormone treatment has been

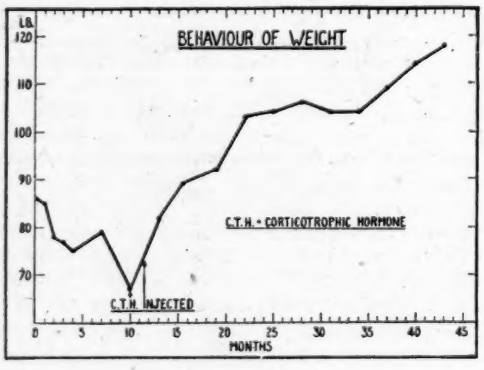

FIG. 3

given, but the improvement has been maintained. The breasts have developed and there has been a normal deposition of fat and restoration of hair loss (Figs. 4 and 5). Menses have not returned, and the vaginal smear, as before treatment, is of the post-menopausal atrophic type. The 17-ketosteroids rose to 8.3 and later improved to 10 mg. per 24 hours. Apart from an immediate loss of the delusions of alimentary malfunction and gain in appetite, there was at first little mental change. Even the posture and expression were unaltered in spite of the improvement in physical state. There has been a change recently. She is now less retarded and seems to be emerging from the depressive state.

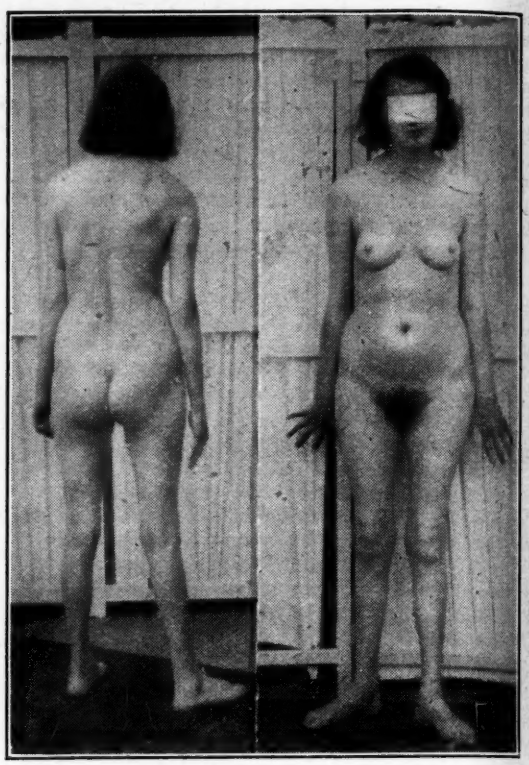

FIG. 4 FIG. 5

Discussion

In this case the physical condition was that of pituitary cachexia, and conformed closely to the picture of Simmonds's disease. Although there was no history of antecedent pregnancy the emaciation and asthenia, dry skin, loss of hair, and subnormal output of anterior pituitary hormones may be attributed fairly to adrenocortical insufficiency secondary to hypopituitarism. This was corrected by treatment with corticotrophic hormone. Improved adrenal performance would be accompanied by improved water and fat storage with more normal salt retention, and therefore better metabolism and alimentary function. Objective evidence that this took place was provided by the gain in weight and strength, loss of the desiccated quality of the skin, restoration of the normal electrical resistance behaviour, rise in output of 17-ketosteroids, and loss of delusions of alimentary inadequacy, which, as we believe, are a secondary derivation of the physical illness. The mechanism of cure was at first replacement therapy. Either atrophy or suppression of function of the adrenal cortex for want of trophic stimulation produced at least a large part of the clinical picture. Stimulation of the adrenal cortex by injected corticotrophic principle of the pituitary at first corrected the deficiency. It is reasonable to suppose that with an approach to normal water and fat metabolism other endocrines behaved in a more normal way, so that to some extent their insufficiency was adjusted. That the patient was able to remain well and even to improve further when corticotrophic hormone was no longer administered indicates that once the anterior-pituitary–peripheral-endocrine system was set in motion there being no destruction of anterior pituitary substance, it could continue to function satisfactorily without aid.

It is believed that menopausal symptoms in many women are due to a temporary rise in gonadotrophic hormone output from hyperactivity of the anterior pituitary (Nathanson *et al.*, 1940). We have noticed in this and similar cases that the menopause came abruptly and there was a complete absence of menopausal symptoms. Assays in such cases showed a very

low or a negligible output of gonadotrophic hormone. This suggests that in this type of case there is a sudden functional reduction in pituitary activity to be followed later by the physical symptoms of hypopituitarism. The suggestion that the picture of pituitary cachexia without structural changes in the pituitary itself can follow the menopause is supported by the resumption of normal pituitary function observed in this case after treatment. The physiological properties of corticotrophic hormone have been studied in hypophysectomized rats. It is known that sugar storage is much reduced after hypophysectomy, for the combustion of fed sugar is much higher than in normal animals. This condition has been corrected by corticotrophic hormone (Reiss *et al.*, 1938). The cholesterol and fat content in hypophysectomized rats can also be increased by corticotrophic hormone (Reiss *et al.*, 1937). No doubt there were comparable actions in the case we have described.

Summary

A case of clinical pituitary cachexia in a nulliparous woman has been described. Clinical and hormone studies indicated extreme hypopituitarism. Treatment with corticotrophic hormone resulted in complete restoration of weight and cosmetic features. This was not a case of anorexia nervosa. The psychotic depression was not relieved until a considerable time after physical improvement was complete. The origin of this condition has been discussed.

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Medical Memoranda

Effect on the Nutrition of School-children of adding Vitamins and Minerals to the Diet

The purpose of this experiment was to discover if the addition of minerals and vitamins to the diet of school-children would make them gain weight at an increased rate.

THE INVESTIGATION

The experiment was carried out between Oct., 1940, and May, 1941, in an industrial area on the south bank of the Thames. For three months 300 children were weighed fortnightly; half of them were then given vitamin supplements for five days a week for three months, and the fortnightly weighings were continued. The ascorbic acid and vitamin B_1 contents of the urine of the "vitamin children" were determined before and after the administration of the supplement; a few vitamin A tests were performed with the photometer. The incidence of colds in the groups was recorded.

The daily supplement given contained 360 mg. of calcium, 552 mg. of phosphorus, 4,000 units of vitamin A, 300 units of vitamin D, 200 units of vitamin B_1, 12 mg. of available iron, 20 mg. of ascorbic acid, and some trace of minerals.

Results.—The average gain in weight of the vitamin children was no greater than that of the controls. The initial urinary estimations suggested that the intake of vitamin B_1 and of ascorbic acid was low, but there was no gross deficiency. Very few of the children showed increased excretion of the vitamins at the end of the experiment. (It should be noted, however, that the vitamins were estimated in single specimens of urine.) The few photometer tests carried out did not show any marked deficiency at either the beginning or the end of the experiment; there was no difference between the two groups in incidence of colds.

DISCUSSION

The experiment, though limited in scope, seems worth reporting, for it was carried out earlier than the other vitamin-feeding tests, in a different part of the country, and minerals as well as vitamins were added to the diet.

The fact that the children did not gain weight at an increased rate while having the supplement may be explained in several ways. The tablets might not have been taken regularly, no vitamin shortage may have been present initially, or a vitamin deficiency may have been present which was so severe that the supplements were not adequate to deal with it. Or a moderate deficiency might have existed, but vitamins given in tablets might not have been so effective as they would have been if given in fruit and vegetable juices. Or a moderate deficiency might have been present, capable of being dealt with by the supplements but accompanied by a deficiency either of first-class protein or of calories. Finally, the children might have been on optimum diets at the beginning of the experiment, and so could not be expected to gain at an increased rate.

There is not space to discuss these points fully. It seems probable that a mild vitamin deficiency existed, accompanied by a shortage of protein. It is possible that the vitamin tablets were not so effective as fruit and vegetable vitamins; it is probable that the children were not on optimal diets. (This last conclusion was arrived at by comparing the average weights of the boys who took the supplements with those of public-school boys.)

This experiment merely corroborates the findings of several workers in this field. Feeding of vitamins in tablets to school-children has had no appreciable effect on weight.

It would be interesting to see the effect on the weight of English school-children of the diet recommended by Brown and Robertson of Toronto as late as 1942. Who could help thriving on food such as the following: (1) A quart of milk daily (32 oz.)? (2) One generous serving of orange, grape-fruit, tomato, or raw cabbage, fruit at another meal, and two vegetables besides potato. (3) One serving of whole-grain cereal with wheat germ. (4) One serving or more of meat, eggs, fish, or fowl, with eggs three or four times a week, and liver or kidney once a week. (5) One regular dose of a good source of vitamin D during at least the six colder months of the year.

I should like to thank Vitamins Ltd. for supplying the tablets free of cost, and also all those who helped me with the experiment.

CECILE ASHER, M.D., M.R.C.P.,
Assistant M.O.H. to the Borough of Finchley (formerly of Erith).

REFERENCE

Brown, A., and Robertson, E. C. (1942). *J. Kansas med. Soc.*, **43**, 237.

Herpes Simplex Corneae in Malaria

Herpes simplex corneae is said to be the commonest ocular complications in malaria (Duke-Elder, 1943). Low and Fairley (1941) state that iritis, retinal haemorrhage, and optic neuritis also sometimes occur. In a series of 4,000 European cases of malaria in West Africa herpes simplex corneae was the only ocular complication noted. Rings of the malignant tertian form of malaria were demonstrable in 35% of the cases. The remainder were diagnosed on clinical grounds as malignant tertian malaria. Corneal lesions developed in the following four cases:

CASE HISTORIES

Case 1.—This patient had three attacks of malaria. In the second attack he developed herpes of the lip on the second day and herpes of the right cornea on the eighth day. The eye was red and painful and corneal sensitivity was diminished. Staining showed multiple fissures in the corneal epithelium. The eye settled in ten days, leaving one nebula. After the third attack, two months later, the nebula had faded and sensitivity had returned to normal.

Cases 2 and 3.—One patient developed herpes simplex corneae in his first and fourth of five attacks of malaria. Dendritic ulcer followed in both instances. The first herpes developed on the sixteenth day, in the left eye, and was rapidly followed by a spreading dendritic ulcer. Treated with atropine and heat, the ulcer healed in 40 days, leaving a scar. The second herpes occurred on the seventh day of a later attack of malaria. A dendritic ulcer, in the shape of a lion rampant, developed on the site of the old scar, and spread rapidly. The whole corneal epithelium was removed with a strong solution of iodine (7% iodine and 5% potassium iodide in alcoholic solution). The eye improved rapidly and was quiet within ten days, leaving the old scar and impaired corneal sensitivity. Another attack of malaria with herpes labialis three months later provoked no eye complications, although the corneal sensitivity was still impaired. The original corneal scar was then less pronounced.

Case 4.—This patient developed herpes of the left cornea on the tenth day of his second attack of malaria. A small ulcer formed near the limbus, which was slow to heal. Treated with atropine and heat, it became vascularized and quiet in five weeks.

COMMENT

In four cases of uniocular herpes simplex corneae among 4,000 cases of malignant tertian malaria corneal lesions occurred between the seventh and the sixteenth day of illness. The best result followed removal of the corneal epithelium with strong iodine solution.

J. GRAHAM SCOTT, M.D.Glas., B.Sc., D.O.M.S.,
Major, R.A.M.C.

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Duke-Elder, Sir W. S. (1943). *Textbook of Ophthalmology*, **2**, 1894. London.
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Reviews

PRINCIPLES OF NUTRITION

Nutrition and National Health; being the Cantor Lectures delivered before the Royal Society of Arts, 1936. By Major-General Sir Robert McCarrison, M.D. (Pp. 75; illustrated. 6s.) London: Faber and Faber, 1944.

Rose's Foundations of Nutrition. Fourth edition. Revised by Grace MacLeod, Ph.D., and Clara Mae Taylor, Ph.D. (Pp. 594, including an appendix of 190 pages; illustrated. $3.75.) New York: The Macmillan Company. 1944.

What was sound teaching in nutrition in 1936 is still sound to-day, and the re-publication of Sir Robert McCarrison's lectures is welcomed. In them he has given a short account of his experiences in the relation of diet to health and disease in India, supported mostly by his own experimental work on rats. He has brought his knowledge of certain seriously deficient Indian diets to bear on the diets of the British people. With a breadth of view which is very stimulating he is able to show that the effects of partial deficiencies may be at least as serious (e.g., in lack of resistance to infection) as those of certain more nearly total deficiencies (e.g., in rickets). His teaching is always constructive. He shows how poor diets may be made good, simply and cheaply, and he pleads for wider education (not only of the poorer classes) on the constitution of good healthy diets, and particularly on the value of whole wheat, milk, and vegetables. The book will be read with pleasurable appreciation by many people, and not least by those who, by now, may be getting rather tired of the "textbook" kind of writing on the subject of nutrition.

Rose's Foundations of Nutrition has been largely revised by two of Prof. Rose's friends who had worked in the same department with her for many years, and with whom she had discussed new arrangements and additions to her book for its next edition. The new arrangements are the result of further experience gained in teaching the principles and practice of nutrition to students with many different backgrounds. The additions are the result of the ever-increasing volume of research work which is being carried out in laboratories all over the world, and of the increasing interest in and even legislation for the practical application of the findings to human dietaries. The more recently discovered vitamins—riboflavin, nicotinic acid, pyridoxine, pantothenic acid, para-aminobenzoic acid, biotin, choline, folic acid, inositol, vitamins K, M, and P, the grass-juice factor, and the milk factor—are treated as fully as present knowledge and the scope of the book demand. Daily requirements of calories, protein, calcium, iron, vitamins A, B_1, C, D, riboflavin, and nicotinic acid are accepted in the amounts proposed by the Food and Nutrition Board of the National Research Council, U.S.A. Particular foods—e.g., foods derived from grain, vegetables and fruits, eggs, cheese, nuts, meat and other flesh foods, fats, sugars and other sweets—are each considered as a whole. The construction of adequate diets for adults, mothers, babies, pre-school and kindergarten children are treated in a capable and practical manner, with enough evidence given in an interesting form to make the reader see how well worth while it is to give the thought and trouble necessary to secure an adequate diet for human beings of all ages and of all ranks of life.

A YEARBOOK OF HEALTH INSTRUCTION

Health Instruction Yearbook. Compiled by Oliver E. Byrd, Ed.D. (Pp. 308. 18s. 6d.) California: Stanford University Press; London: Oxford University Press.

In order to improve health education in American schools and institutions of higher learning Prof. Oliver E. Byrd, director of health education at Stanford University, has published a comprehensive yearbook, the first of an intended annual series. It is designed for the use of teachers of hygiene, school nurses, school administrators, students, and others who desire to know of the developments in the field of health, and it seems extremely suitable for the purpose. It includes an enormous mass of reliable and up-to-date information, derived mostly from American sources but including many references to experiences in Britain and other countries. Some of its chapters are so full of facts and figures as to be slightly indigestible for the general reader, but the information should prove useful for reference.

Among the twenty chapters will be found a lengthy one on nutrition and health. This includes an interesting sidelight on the extraordinary variety of peoples now incorporated in the British Army. For them no fewer than 130 different ration scales of food have to be provided. Though we in this country may think that ration cards are a worry, we must pity the average Swede, who has at least 25 cards in current use, and has to read a sort of stock market report whenever he goes out to shop. In the chapter on exercise and mechanics we read that of the first two million men examined in America for military service, 50% had to be rejected, almost all of them for physical and mental defects. The chapter on mental health and disease records that the Nazis at first tried to whip their soldiers into shape by brutality, punishment, and other rough treatment, but that on the advice of their psychologists they found it advantageous to make military life attractive, to assist instead of to punish, and to play up the group spirit. Officers were required to be informal with their men in contrast to the old Prussian concept. The long chapter on infection and immunity deals rather fully with malaria and venereal disease, while there are shorter chapters on habit-forming substances and on safety (especially traffic accidents). From the chapter on family health it is surprising to learn that over 40% of the native Americans living in the United States (in 1940) were not registered at the time of birth. A long chapter on school health is followed by shorter ones on occupational health and community health services. In the last chapter, on trends and probabilities, it is stated that a Bill was introduced in the Senate in 1943 which proposes a single unified system of national social insurance. It resembles the Beveridge plan in many respects. Another item of information relates to a scheme which is said to be unique in municipal history. The City of New York has contracted to pay the Public Health Research Institute $100,000 a year for fundamental medical research and investigation.

A HANDBOOK ON V.D.

Handbook of Diagnosis and Treatment of Venereal Diseases. By A. E. W. McLachlan, M.B., Ch.B., D.P.H., F.R.S.Ed. (Pp. 364; illustrated. 15s., plus 7d. postage.) Edinburgh: E. and S. Livingstone. 1944.

When an author sets himself the task of writing a book on a medical subject he should, like an orator or a preacher, have two main objects in view: first, to gain the attention of those whom he is addressing, and, secondly, to hold it. Dr. McLachlan in his *Handbook of Diagnosis and Treatment of Venereal Diseases* certainly succeeds in the former. This is an attractive little book of convenient size, crammed with useful information and adorned with numerous figures—many of them beautifully reproduced in colour; in fact it would be hard to find anywhere coloured plates which depict the lesions of syphilis more faithfully. It is in regard to the second desideratum that we find him less successful. The style is ponderous, not to say pedantic, tautology is frequent, and long words are used where simple short ones would meet the case.

The essential points in the diagnosis of syphilis, and the signs of the disease in its various stages, are set out with commendable clarity, and the treatment of the disease is in keeping with modern British teaching; that is to say, the concurrent-intermittent system, using neoarsphenamine and bismuth, is the one recommended. Gonorrhoea is dealt with at some length, and the sulphonamides are skilfully handled—not given in inadequate doses, as occurs only too commonly nowadays. Apparently the subject-matter of this book had been in hand for some time before publication, since, of the various recent intensive methods of treating syphilis, only the five-day method is mentioned, and the word "penicillin" does not occur in connexion with the treatment of either gonorrhoea or syphilis. Sulphonamide-resistant gonorrhoea is rearing its ugly head more and more, and often taxes the ingenuity of the experienced venereologist, to say nothing of the general practitioner. A fuller section on this subject would have added greatly to the value of the book. Besides sections on syphilis, gonorrhoea, and chancroid there is a chapter on urethroscopy which is particularly good, and, finally, one on other conditions

commonly referred to venereal disease departments; this last comprises only 17 pages, which seem inadequate when it is realized that a large proportion of the clientele of the average V.D. clinic is suffering from none of the three main venereal diseases; non-gonococcal urethritis, balano-posthitis, and *Trichomonas vaginalis* infestations are all very common, as also are warts on the genitals.

The general practitioner and the student will find this little book a mine of information. The teaching is sound and founded on personal experience, and if new methods of treatment have developed too fast for author and publisher to keep pace with them, these industrious and harassed people can hardly be blamed.

Notes on Books

Prof. GLANZMANN'S brochure on epidemic poliomyelitis (*Die epidemische Kinderlähmung*. Berne: Hans Huber; Sw. fr.6.80) contains a useful and well-presented collection of statistical data relating to Switzerland in general and Berne in particular. Since 1935 there have been three years in each of which more than 1,000 cases of the disease were notified in Switzerland: 1936 (1,269), 1937 (1,494), and 1941 (1,479). As in other countries, the disease has tended to become more widespread, the age incidence to move towards older ages, and the seasonal distribution (though a summer maximum persists) to be extended. Prof. Glanzmann is somewhat inclined to favour the view that sewage is a vehicle of infection, but the brochure—which is based upon a lecture—does not, except by providing statistical data and maps of distribution, contribute much to epidemiological knowledge.

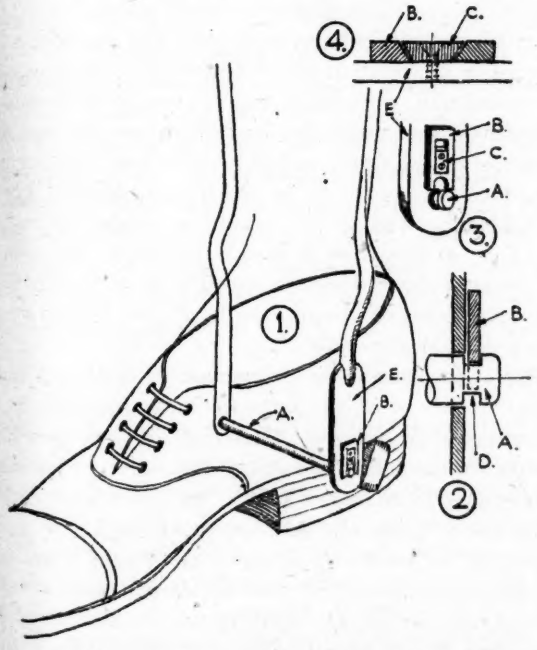
H. K. Lewis and Co. have published at 4s. an eighth edition of Dr. R. D. LAWRENCE'S booklet *The Diabetic A B C*, containing practical guidance for patients and nurses. With it is issued a third edition (price 9d.) of *The Diabetic A B C War-time Supplement*.

Preparations and Appliances

A WALKING CALLIPER SPLINT

Dr. J. MACFARLANE COWAN (Stafford) writes:

Although the design of walking calliper splints has remained unchanged for a long period, there are two disadvantages in the customary design, and complaints by patients of discomfort are by no means infrequent. Owing to what amounts to a three-sided box construction with a non-rigid fourth side (formed by the two pins and the boot heel), lateral mobility is not well controlled. The normal arrangement of straps, or stirrups, to keep the two pins at the lower end inserted into the heel is clumsy and not always effective, and tends to make the splints uncomfortable to wear.



It occurred to me that a four-sided box construction would increase the rigidity appreciably, and would at the same time allow of a locking device being fitted which would permit a simple and positive location of the lower end of the splint. A modification was designed and a test model constructed. This has now been worn for some months by a patient, who reports that the comfort and stability are far in excess of those achieved by any splint he has previously had.

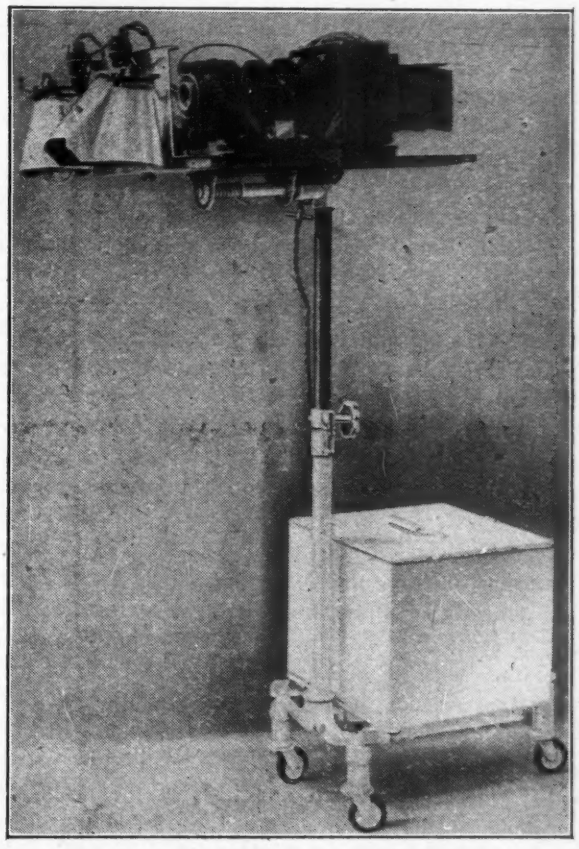
The accompanying diagram illustrates the construction, which is not difficult and could be carried out by anyone with engineering experience. The lower ends of the splint are modified by removing the pins, and on one side fitting a piece of metal rod 1/4 in. in diameter, and on the other side a plate with a 1/4 in. hole and locking device as shown. The natural spring of the metal side-pieces of the splint allows it to be removed when unlocked, though in the locked position the splint is practically rigid. The simple locking device is shown in Figs. 2, 3, and 4.

I am indebted to Mr. G. M. Boon, A.R.I.B.A., for the drawing and his assistance in the construction of this modification.

A CLINICAL CAMERA-STAND

Dr. B. RICHARDSON BILLINGS (Petts Wood, Kent) writes:

I have recently constructed a camera-stand with universal movement which facilitates clinical photography, especially photography of surgical operations under aseptic conditions. Any type of "still" or "movie" camera can be used with a lens capable of the work in hand. The head (sterilizable) incorporates hood, lamps, and reflector. Lamps are photofloods adjustable to any required position. The reflector can be either mirror or prism; in either case the same optical principle applies as in a laryngoscope, affording a "surgeon's-eye view" of the field. The mirror is removable for straight-through photography without altering other factors which should remain fairly constant. In performance the apparatus is quick, easy, and efficient.



I am indebted to Mr. Kenneth Heritage, F.R.C.S., senior surgeon at St. John's Hospital, Lewisham, for his co-operation and for his permission to try this apparatus over his table; and to the theatre sister and staff.

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CONTROL OF BACILLARY DYSENTERY

Notifications of dysentery in each of the past three years have been double the average of the immediate pre-war years, and during 1944 the larger incidence has been steadily maintained. Part of this apparently increased prevalence may be due to greater awareness of the infection, together with a greater use of laboratory facilities, for clinical diagnosis of the mild endemic dysentery in this country is not easy, and the 7,000 annual notifications must represent only a small part of the total morbidity. Thus if the incidence of dysentery in a community is a measure of current hygienic standards we should have to admit that these standards have fallen in recent years. Added to that is the very real risk of more severe types of dysentery being introduced by troops returning from abroad. Indeed, Shiga-dysentery carriers have already been identified among Italian prisoners of war here. Dysentery is still one of the major epidemic infections of war, and improved cultural methods have shown that convalescent carrier rates may be as high as 80% of affected cases, so that movements of troops are likely to introduce the disease to unsalted Service and civilian populations. This hazard must be much in the mind of the Army hygienist at present, and it is proper to consider what are the most effective measures for preventing the dissemination of dysentery both at home and abroad. But first we need to know how the infection is spread.

Explosive outbreaks of dysentery are less common than happens with the enteric fevers, and epidemiological evidence suggests that case-to-case infection is the usual mode of spread in civilian communities. The infector is more likely to be the missed mild case or convalescent or healthy contact carrier than the typical clinical case, which is quickly recognized and isolated. The infecting organism may be transferred in a variety of ways, but the infected food-handler who has not been disciplined to hand-washing after using the W.C. and before handling food is particularly dangerous. Flies undoubtedly play an important part in spreading the disease in subtropical countries, where the incidence of dysentery is closely related to the seasonal prevalence of the fly. But flies flourish also in temperate climates, particularly when sanitation reverts to more primitive forms as with armies in the field, or when food-residues are salvaged and hens in the back-garden contribute to the larder. Spread of infection by contaminated water supplies is unlikely, but milk-borne outbreaks may and do occur. In these circumstances control of dysentery depends primarily on high standards of public sanitation and personal hygiene, but these are the prophylactic measures which are least easy of attainment by armies in the field or in devastated towns. The Army has, however, aimed high in its hygienic standards by disposal of excrement to prevent fly-breeding, by close supervision of cookhouse and staff, by various anti-fly measures, and by educational talks. It will no doubt be the task of the medical staff of G.5, the Allied Army's Civil Affairs branch, to do the same for liberated European towns. At home there is need for greatly increased facilities in public and private lavatories for hand-washing, a habit which, after use of the W.C., should be as automatic as adjusting the dress.

In dealing with an outbreak of dysentery further spread will be prevented not so much by isolation of the clinical case as by detection and cure of the missed case and convalescent and contact carriers,[1] whose numbers may far exceed the patients with clinical dysentery. Detection has been greatly facilitated by the use of desoxycholate-citrate agar and the rectal swab, but, except in "closed" communities, this is not a very practicable procedure. Cure of the clinical case of dysentery is hastened by sulphonamide therapy; even sulphanilamide[2] seems to be effective, but the safest drug is sulphaguanidine, under which in moderate doses rapid improvement occurs with little risk of toxic effects. However, bacteriological cure is as important as clinical cure, and has been too little studied by those with opportunities for comparing the efficiency of different sulphonamides in this respect. Sulphaguanidine will usually get rid of members of the Flexner family, including the Newcastle variant, from both clinical case and carrier, but, save in early infections, it is much less effective against the Sonne bacillus,[3] which is more susceptible to sulphapyridine.[4] Additional information is needed about the efficacy of sulphadiazine, popular in America, and our own sulphamezathine, which, besides being relatively non-toxic, could probably be used in much smaller dosage than sulphaguanidine—a point of some importance when large numbers have to be treated in the field. As an alternative to detection and treatment of the carrier, which in widespread outbreaks may be as impracticable as isolation of meningococcus carriers is now realized to be, chemoprophylaxis may, as has happened with the meningococcus carrier, prove to be the best method of stopping an epidemic. Thus Scott[5] quickly controlled an outbreak of Sonne dysentery in a mental institution by giving all the inmates the remarkably small dose of 0.5 g. sulphaguanidine thrice daily until four days after the last reported case was clinically well.

There has been sharp divergence of opinion about the value of two other prophylactic measures—specific bacteriophage and vaccines. Bacteriophage has been lauded for prevention and for cure of dysentery, but it is noteworthy that its advocates usually had no adequate control series, while those who had instituted this check reported guardedly or unfavourably upon it. Large quantities of bacteriophage—apparently the standard treatment for forward troops in the German Army—were captured at El Alamein; it was found to have a high potency against the dysentery strains prevalent in North Africa at the time.

1 *British Medical Journal*, 1944, **1**, 806.
2 *Lancet*, 1944, **1**, 784.
3 *British Medical Journal*, 1943, **2**, 35.
4 *Lancet*, 1943, **2**, 71.
5 *J. Amer. med. Ass.*, 1943, **122**, 588.

Boyd and Portnov,[6] therefore decided to test its prophylactic and curative value against dysentery in controlled trials among German prisoners of war. For the prophylactic test all the inmates in one P.O.W. "cage" were given 10 c.cm. of bacteriophage by mouth before breakfast on each of three successive mornings. The sickness rates in this cage and in three similar control cages were accurately kept for four weeks before and four weeks after the course of bacteriophage. The incidence of dysentery in the "treated" group was 27.5 per 1,000 in the first four weeks and 19.5 per 1,000 in the second four weeks; the corresponding figures in the control series were 11.25 and 10.29. Thus, although there seemed to be some benefit from prophylactic phage, the difference was not apparently significant, and the incidence of infection in the treated group was still higher than in the control group over the same period. Two series of cages were chosen for the treatment test. Bacteriophage was given by mouth (15 c.cm. thrice daily for two days; three 10-c.cm. doses on the third day) to all men in one group as soon as they reported sick with diarrhoea. The control group had the standard saline treatment. Analysis of the results disclosed no effect from phage therapy either in aborting the typical clinical infection or in modifying its course, although the phage persisted in the faeces for 5 to 6 days and was detectable for short periods in both blood and urine.

Prophylaxis of dysentery by vaccines has found little favour, except, perhaps, in mental hospitals. The multiplicity of antigenic types of dysentery bacilli and the severe reactions provoked particularly by the Shiga strain have complicated the problem. However, Schütze[7] has shown that fractions of the Shiga bacillus prepared by Morgan's method give good protection to mice injected subcutaneously at two to six weeks' intervals, a higher degree of resistance being observed with the longer interval between the two injections. The U.S. Office of War Information in a bulletin dated May 8 has also reported encouraging results in the protection of children with a mixed Flexner vaccine. Thus the control of dysentery is being tackled vigorously from many standpoints, and these "combined operations" should help to prevent this troublesome and highly infectious disease gaining a stronger foothold than it already has on both the home and battle fronts.

D.D.T.: A NEW SYNTHETIC INSECTICIDE

In peacetime insect pests are often exceedingly troublesome, but in this country they do not spread disease to any serious extent. The operations of war, however, involve sending many of our soldiers abroad to live under relatively primitive conditions, sometimes in tropical or subtropical climates. Inevitably there is a considerable danger of insect-borne diseases, some of which, like typhus, malaria, and dysentery, are very serious. Usually the principal method of preventing or controlling such epidemics is to attack the insect vector. Consequently the supplies of efficient insecticides become of vital importance in "global" warfare. At all times, but especially in war, it is an advantage for an insecticide to be synthetic. Insecticides of vegetable origin mostly come from distant countries where space and labour for cultivation are available and where the climate is suitable. These growing areas may be overrun by the enemy (e.g., Malaya); and in any case the transport of the material takes up shipping space. In the early part of this war we suffered from the disadvantage of having no wholly synthetic substitute for the widely used plant products pyrethrum and derris. Supplies of these insecticides rapidly became scarce in spite of rigid economies. The lack of suitable synthetic compounds was not for want of searching. In a number of Government and industrial laboratories in various countries a systematic examination of compounds of possible insecticidal value had been going on for a decade. The fact that nothing very striking had been found is due to the almost infinite variety of organic compounds; many thousands of samples had been tested. Quite recently, however, it has been discovered that a comparatively simple compound has outstanding merit as an insecticide. This is 2,2-*bis* (parachlorphenyl) 1,1,1-trichlorethane, known as "D.D.T." from the generic name dichlor-diphenyl-trichlorethane. When pure it is a white crystalline solid with a slight, not unpleasant, odour. Practically insoluble in water, it dissolves in many organic liquids; it is non-volatile and chemically rather stable. D.D.T. was first synthesized in 1874, but its remarkable toxicity to insects remained unsuspected until 1940, when the Swiss firm Geigy A.G. took out an initial patent in Switzerland. The material came to the notice of British and American scientists almost simultaneously in 1942, and the preliminary tests soon revealed its great promise. At this time the chief demands by the Allied Services were for insecticides to use against the malaria mosquito and the typhus-carrying louse. The new compound appeared to be suitable for supplementing or entirely replacing the insecticides already employed. But from the initial laboratory tests a great deal of careful investigation was necessary before D.D.T. could be produced and used on a large scale. This research was carried out rapidly but thoroughly by entomologists, chemists, and medical men at a number of laboratories both in this country and in America. By a complete exchange of progress reports the work was carried out as a unified project without reduplication or misunderstanding.

One of the first points to be investigated was the possible danger to man. This was assessed by determinations of both acute and chronic toxicity on a variety of mammals. Although we cannot substantiate statements which have appeared in the daily press to the effect that D.D.T. is entirely harmless to man, it is quite safe in the form in which it is used. The dry powder is practically harmless unless eaten; it is not absorbed through the skin, but it may be when in solution. Precautions, therefore, should be taken by operators frequently handling solutions of the compound in kerosene or other liquids. The production of the material raised a host of problems which have since been solved. Methods of manufacture have been improved, and the various impurities in commercial samples have been isolated and examined. A pilot plant

[6] *Trans. roy. Soc. trop. Med. Hyg.*, 1944, **37**, 243.
[7] *J. Path. Bact.*, 1943, **55**, 457.

was started to produce fair quantities for large-scale trials. Finally, full-scale plants were set in operation. A great deal of experimental work went to perfect the practical application of the insecticide against various pests. For use against the body louse two methods were worked out. In one D.D.T. was employed in a diluted dust, and in the other undergarments were impregnated with it to render them louse-proof. The dust is useful for speedy application to large numbers of infested civilians to check a typhus epidemic. The remarkable effectiveness of this method was demonstrated recently in Naples. The successful quenching of the epidemic in mid-winter has received its due recognition, and we will merely emphasize that, apart from the effectiveness of the insecticide, its ease of application was the most important factor. No other delousing method could hope to approach the maximum number of 73,000 people treated on one day. Impregnation of undergarments is most suitable for soldiers or others issued with uniform clothing. It is a most effective way of keeping a large body of men louse-free for an extensive time under difficult conditions. The treatment is imperceptible on the garments and does not readily wash out. This will be the main protection for British troops in liberated Europe where typhus is endemic over large areas. For preventing malaria, D.D.T. can be made up in emulsions and sprayed over the waters where the larvae occur. But this method, though reliable, does not give protection from the adults already present. Therefore methods of spraying from the air have been devised, by which large areas can be rendered safe before planned operations are carried out. While Service requirements must take prior place at the moment, the post-war possibilities of this new weapon against malaria are enormous. It is known that the peacetime world death rate from malaria was about 2,000,000 annually, and the annual economic loss to the British Empire alone was between 50 and 60 million pounds.

Even in Britain the insecticide will have many peacetime applications. On account of its permanent nature, surfaces sprayed with strong solutions remain toxic to insects for weeks or months afterwards. This is of obvious value for checking the persistent house-fly, especially in places like hospitals, where they are all too common and indeed dangerous. Another pest which can be attacked by this method is the bed-bug. The possibility of bug-proofing a house will come as a godsend to the harassed health authorities in some districts. There are other uses too numerous to mention; but it is clear that the large quantities being manufactured for the Forces will be absorbed after the war. Veterinary practice and agriculture will benefit, but perhaps the most advantage will accrue to human hygiene.

HEALTH OF THE STUDENT

Many people are inclined to take the health of students for granted. The "very lean, And pale and leaden ey'd" student of Thomas Hood is now thought of as a robust youth spending half his time in games. Yet in some respects, from a health point of view, students are a neglected community. Unlike their contemporaries in office and workshop, they do not come under National Health Insurance, nor are they included in any general scheme of medical examination. Some universities and colleges, like Birmingham and Sheffield, and the women's colleges at Oxford, impose an entrance medical examination or an overhaul during the first year, and others, like Leeds and Liverpool, have an examination scheme on a voluntary basis. But many colleges have no such scheme now or in prospect. In the years of student life, from 17 to 25, tuberculosis still takes first place among causes of death; the peak incidence of tuberculosis in females happens in that age period. Medical students are perhaps better provided for than students in other faculties by reason of their immediate access to hospital facilities when ill, but that is not the same thing as preventive examination and periodical overhaul. Moreover, in their clinical years they are more exposed than most students to risk of infection of one kind or another.

The British Medical Students Association, at two conferences, has paid a good deal of attention to student health, and has co-operated with three other organizations—the National Union of Students, the Scottish Union, and the British Dental Students Association—to form a committee which has in turn produced a pamphlet[1] setting forth a long-term and a short-term policy. The discussion of a long-term policy is halted by the prospect of social insurance on something like the Beveridge plan and of a national health service. Obviously it would be better to have a complete scheme for everybody than to ask for special arrangements for students. There are, however, certain things which can be done at once. The committee of these undergraduate organizations urges that every student should be examined by a medical practitioner on entering the university or during his first term, and periodically thereafter, and that for this purpose a university should appoint a whole-time medical officer. This has already been done in the University of Birmingham, where a whole-time medical officer works in close touch with the director of physical training. Matters to which the students attach special importance are the *x*-ray examination of the chest, eyesight examination, dental care, and the availability of immunization against diphtheria and, particularly in the case of medical students, against typhoid, smallpox, and scarlet fever. So far as treatment is concerned attention is drawn to two insurance schemes. One of these is the Oxford University Provident Association, which, for an annual fee of three guineas, arranges for a number of services and benefits in sickness up to a stated maximum. The other is a compulsory scheme for students at the University College of Wales, Aberystwyth, covering attendance and treatment. On the more preventive and environmental side it is said that some of the smaller universities are short of recreational facilities, and some colleges have no playing fields or gymnasiums at all. The committee recommends the avoidance of a narrow scholastic outlook, the cultivation of outside interests, the encouragement of summer camps and "assisted" holidays abroad, and the accent of cheerfulness in refectories, common rooms, and libraries. An odd omission from the pamphlet is any reference to students' lodgings. Few of these nowadays are as melancholy as the digs in Lant Street, Borough, which curbed even the high spirits of Bob Sawyer, but some of those to be seen in university towns are far from hygienic. There is everything to be said for providing bright, roomy, well-managed hostels.

The health education of the student is important from a wider point of view than his own well-being. The students of to-day are destined to be the educated leaders of to-morrow, and through them will come largely the dissemination of health knowledge and wholesome habits to the general community.

[1] *Health and the Student*. Obtainable, price 4d., from British Medical Students Association, B.M.A. House, Tavistock Square, W.C.2.

MEDICAL BENEVOLENCE IN WARTIME

Sir Arnold Lawson, chairman of the Royal Medical Benevolent Fund, has issued a letter to subscribers setting out the position of the Fund after nearly five years of war. He announces with pleasure that the Presidents of the three Royal Colleges and the Master of the Society of Apothecaries have consented to serve as *ex officio* members on the committee of management. In 1943 the Fund distributed in gifts and annuities the record sum of £22,702. The experience of the R.M.B.F. in war, like that of other charities, is that there are fewer new applicants, but the circumstances of those who do apply are more urgent and distressing, so that larger grants are necessary. The income from subscriptions and donations amounted to £14,374, not quite up to the level of 1938. More subscribers have signed the seven-year covenant, which, with income tax at ten shillings in the pound, has the effect of doubling the subscription. Another wartime difficulty encountered is the lack of domestic help for the old and infirm beneficiaries. The Fund has considered establishing a home of its own for these people, but the idea has been deferred until after the war, when it may be made the object of a victory endowment fund. Sir Arnold Lawson appeals to medical men, especially medical officers of health, who have such opportunities of knowing members of the profession and their friends, to act as local branch secretaries.

FREEDOM TO PUBLISH

We print in this week's *Supplement* a letter from the Secretary of the British Medical Association which has been sent to the secretaries of voluntary hospitals, medical officers of health of county councils, county borough councils, and borough councils, and to the clerks of these councils. The letter brings to light once more the practice of certain authorities of imposing a censorship on the publications of medical men in their service. It certainly seems ironical that in twentieth-century Britain we should have to plead for freedom to publish the written word. It is all the more remarkable when we consider that the freedom that is being asked in the Secretary's letter is the right to publish scientific articles, which are supposedly a statement and elaboration of ascertained facts. The almost casual way in which people in this country are coming to accept the surrender of freedom as something which in some mysterious way is bound up with progress is a phenomenon for which the future historian will no doubt find sufficient reason. But at a time when the medical profession is being faced with one huge restriction on the freedom to practise we should at least do all we can to preserve the freedom to speak and to write and to publish. For with these goes the freedom to think. It was only last year that we criticized in these columns the restriction imposed by the London County Council upon its medical officers, and as a result the L.C.C. altered its standing order to the effect that medical officers could publish books and articles on "purely technical or scientific" subjects without first having to seek permission from the Chief Medical Officer. In the amended standing order the words "purely technical and scientific" replace the words "scientific or professional" which appeared in the previous order. Why this alteration? In the profession of medicine there are very many matters of interest and importance to doctors which cannot be described by the words "purely scientific and technical." Indeed, these other matters now loom unpleasantly large, and at this moment the L.C.C. sees fit by implication to impose a censorship upon the publication by its medical officers of their views on medical politics. Is it that the L.C.C. is afraid of criticism of its administrative machine, or is this just another example of the arbitrary abuse of authority by those in powerful positions? We would appeal to the L.C.C. as the largest employing authority in this country to treat its medical men as responsible adults and as free men. This is a cause which medical men generally, whether employed or practising freely, should make their own; and they should bring pressure to bear at all points until these political birthrights are restored.

FATTY LIVER AND SUDDEN DEATH

A remarkable series of cases in which sudden death was associated with an advanced degree of fatty degeneration of the liver is reported by R. L. Graham.[1] A total of 11 such cases came to his notice at Baltimore during only one year. In 6 of these there was some lesion other than that in the liver which might have been responsible for death, but in 5 which are described in detail the liver was the only organ showing any significant changes post mortem. Their ages ranged from 27 to 40 years, and in each case there was a strong history or suspicion of alcoholism. In 3 there was a short period of unconsciousness before death, accompanied in 2 by seizures described as epileptic; but in the other 2 there were no such manifestations, and one death occurred during sleep. The fifth case was remarkable in that the man concerned had been called up for Army service and submitted to a prolonged medical examination on the day of his death without any abnormality being detected. The constant post-mortem finding was a large, obviously fatty liver showing microscopically so great a distension of the cells with fat globules as to compress their nuclei. The alcohol content of the liver was estimated and was in no case so high that acute alcoholism could have been the cause of death. Blood-sugar estimations were made in only one case and found to be within normal limits; the author nevertheless suspects that hypoglycaemia may be a factor in this condition. The other possibility is a vitamin deficiency, such as the inadequate diet of the alcoholic is particularly liable to cause. There is some experimental support for this hypothesis, since Sebrell and Onstott[2] have reported that dogs on a diet deficient in riboflavin and developing a fatty liver are liable to sudden collapse and coma, which is rapidly fatal unless riboflavin is administered. This condition is apparently unrecognized, but the occurrence of such a series in a single American city suggests that it cannot be altogether uncommon, and Graham's observations should lead others to recognize and elucidate it further.

INFECTED LIVERS WANTED

The group investigating infective hepatitis for the Medical Research Council at Cambridge are anxious to obtain specimens of liver from rapidly fatal cases of acute yellow atrophy, acute or subacute necrosis occurring in patients suffering from infective hepatitis (catarrhal jaundice), or arsenotherapy jaundice. The pieces of liver should be 4 cubic inches in size, removed with aseptic precautions, and placed in a sterile container packed in ice. Specimens should be sent thus packed on passenger train to either The Jaundice Laboratory, Department of Pathology, Tennis Court Road, Cambridge, or Dr. MacCallum, Wellcome Research Institute, 183, Euston Road, London, W.C.1, whichever can be reached most rapidly from the dispatching centre. The specimens should be marked "To Be Called For," and a telegram sent giving notice of their arrival.

1 *Johns Hopk. Hosp. Bull.*, 1944, **74**, 16.
2 *Publ. Hlth. Rep. Wash.*, 1938, **53**, 83.

TRACHOMA IN LONDON: THE END OF A CHAPTER

BY

ARNOLD SORSBY, M.D., F.R.C.S.

On May 10, 1944, the last five remaining children in the trachoma block at White Oak (L.C.C.) Hospital were discharged and the block closed down. It would be obviously fallacious to assume that trachoma no longer exists in London, but the conclusion is warranted that the affection no longer presents a problem of epidemic proportions among school-children of the metropolis—a state of affairs that prevailed within living memory.

Elsewhere (Sorsby, 1935) an account has been given of how trachoma came to be introduced during the first half of the last century among children under the care of the Poor Law authorities. The workhouses, the private contractors' schools of the type of Dotheboys Hall, the barrack schools of the multiple and conflicting Poor Law authorities of London, and the rudimentary medical and hygienic services provided by these authorities all tended to make trachoma—and other infections—endemic in Poor Law institutions. The need for effective isolation and treatment had been pressed upon the authorities by numberless ophthalmologists and physicians; it was unanimously held by oculists that the then existing state of affairs was "an arrangement for favouring the production and spread of the disease, and then keeping it in check by unceasing, laborious, and expensive medical treatment"; and the medical officer of one of these Poor Law schools bluntly testified that "hundreds of eyes admitted healthy have been attacked here, and it is useless, and would be cowardly, to attempt to deny or conceal it." In 1872 Bridges spoke of the Anerley Poor Law School as "a great ophthalmic infirmary"; Nettleship, in 1875, found that only 20% of 8,798 children at Poor Law schools examined by him had eyes free from infection; and in 1890 Sydney Stephenson was hoping for a time "when 'ophthalmia at Hanwell' will not form a standing and attractive headline for the evening papers."

That trachoma could be stamped out by effective segregation and treatment was not merely a matter of informed opinion; it had been proved by a short-lived experiment carried out for Anerley by Nettleship and his wife at a temporary isolation school in 1872, and by Stephenson in 1889 for Hanwell in an iron-built structure which the authorities of that school had been compelled to erect against their will. But the "bane of the Poor Law school" continued with it till the end. It was not until a departmental committee of the Local Government Board reported adversely in 1897 on the whole spirit and structure of the Poor Law schools that action became possible. The recommendation of this committee that there be established one or more ophthalmic and other hospital schools under the control of a central authority for the metropolis made it possible for the Metropolitan Asylums Board to proceed with the building of the necessary hospital schools. Two such institutions, with a total bed capacity of 720, were opened at White Oak Hospital on March 20, 1903, and High Wood Hospital on July 26, 1904. Three schools had been planned in 1897, but so effective were the measures adopted at Hanwell, which had served in the meantime as a central isolation school, that doubt arose whether one school would not be adequate. The temporary isolation school at Hanwell, erected in 1889, rather than the opening of White Oak Hospital, may therefore be regarded as the beginning of the solution of the trachoma problem among Poor Law children in London. The subsequent history is one of continuous decline in the incidence of trachoma as judged by the annual admissions. By 1918 High Wood had become superfluous, and was closed down as an ophthalmic school, and White Oak itself was half empty.

In 1921 children from London County Council schools began to be admitted—a radical departure not only administratively but also clinically, as non-infectious cases, such as children with phlyctenular ophthalmia, were admitted; subsequent to 1924 all chronic eye disease in L.C.C. school-children was being treated at White Oak Hospital. As for trachoma, the following figures show the steady decline in admissions:

1903	292
1904–13 yearly average	112
1914–23* " "	29
1924–33† " "	34
1934–43 " "	13

* Excluding the years 1915–18, for which no data are available.
† Excluding the year 1924, when there were 201 admissions from an outbreak at Poplar.

The decline in the numbers admitted during the past 10 years has been steady, as can be seen from the figures of actual admissions for each of the years from 1934 to 1943 in sequence: 21, 31, 11, 28, 10, 5, 5, 8, 5, and 7. It is worth noting that these admissions include children from outside the L.C.C. area.

That trachoma is still not infrequent in London is only too obvious by the number of adult patients seen at the eye hospitals. It is difficult to assess the total number, but each patient presents a considerable individual and social problem, and is the source of a potential epidemic. From every point of view, early and persistent treatment is essential. The lack of persistence on the part of many patients and the no less marked lack of adequate in-patient facilities for such patients at eye hospitals raise the question whether the present-day methods of dealing with trachomatous adults could not be bettered. The L.C.C. under pressure of war made provision for the admission to one of their fever hospitals of adults suffering from trachoma, but it is possible that more radical measures are required. Indicative of what can be achieved by systematized and persistent effort, experience at Glasgow may be quoted (Sorsby, 1939). Notification was made compulsory in that city in Oct., 1914, and is still in force. The number of new cases notified has shown an almost steady decline since 1915, as the following figures show:

Year	No. of New Cases	Year	No. of New Cases
1915	112	1930	25
1916	69	1931	32
1917	90	1932	24
1918	47	1933	20
1919	85	1934	17
1920	77	1935	18
1921	68	1936	12
1922	68	1937	15
1923	62	1938	15
1924	53	1939	10
1925	41	1940	7
1926	43	1941	10
1927	27	1942	10
1928	30	1943	3
1929	45		

In terms of case rate per 1,000,000 of population, the following figures illustrate the downward trend:

Year	Case Rate per 1,000,000
1919	78
1924	41
1929	39
1934	15
1939	9
1940–3 yearly average	7

Notification was supplemented from the beginning by systematic treatment in a trachoma clinic, where examination of contacts was also carried out, and by the provision of in-patient accommodation for both children and adults requiring in-patient treatment.

In London, with its excellent school medical service, trachoma in school-children is unlikely to escape observation and treatment, but there are no systematic special provisions for the pre-school child and the adult. Statutory notification of trachoma would seem to be a necessary step; not, indeed, for the purpose of obtaining statistical data—this is a subsidiary consideration in making notification of any affection compulsory—but for the creation of the machinery needed for the detection of this insidious affection, the study of the home conditions under which it may be spread, and the provision of adequate facilities for treatment. London, with its universal contacts in normal times, is especially prone to the accidental introduction of trachoma, and under suitable conditions the disease may spread rapidly, as the epidemic in Poplar in 1924 revealed. To justify action it is unnecessary to conjure up a spectre of infection spreading from a trachoma-infested Continent at the end of the war. The experience at White Oak Hospital has shown that trachoma could rapidly be eliminated from a highly infected school population—and this experience, supplemented by that obtained at Glasgow, rather than imaginary fears, amply justifies an energetic approach to the residual problem of trachoma in the adult population.

Summary

The closing of the trachoma block at White Oak Hospital, Swanley, is recorded. Trachoma may now be regarded as eliminated from the child population of London, in striking contrast to the conditions prevailing a generation ago among the poorer sections of the community.

In the light of the history of this achievement and the more recent experiences at Glasgow, where a great reduction in trachoma has followed statutory notification and the provision of adequate facilities for treatment of both adults and children, it is suggested that the elimination and prevention of trachoma in adults in London demand that the affection be made notifiable and that statutory provision be made for treatment centres.

REFERENCES

Sorsby, A. (1935). L.C.C. Ann. Rep., Vol. iv, Part III, p. 69.
—— (1939). *Rev. int. Trachome*, **16**, 148.

KING EDWARD'S HOSPITAL FUND

Guy's Hospital is to be the first to benefit from the provision made by Lord Nuffield, when the Nuffield Trust for the Special Areas was established some seven years ago, that any sums which might be available (through repayment of loans, etc.) from the Trust should go to King Edward's Hospital Fund. A first instalment of £300,000 has been received by the Fund, and Lord Nuffield has asked that out of this a grant of £250,000 should be made to Guy's. This was announced by the Duke of Gloucester when he presided at the recent annual meeting of the King's Fund. In the same speech the Duke said of the Government's health service proposals:

"We wish all success to the Minister in the very difficult task before him, and we welcome the indications he has given of his desire to find an enduring solution which will be generally acceptable. We do not believe that such a solution can be found by any method which fails to preserve the freedom of the medical profession and of voluntary hospitals. While we welcome assistance from public funds, it is of the first importance that it should leave the governing bodies of voluntary hospitals and their medical staffs unfettered in their pursuit of health and healing."

Presenting the report of the Fund's Committee on Hospital Diet Sir Jack Drummond said that the catering service had, with a few notable exceptions, been the Cinderella of the hospital services. In this respect we were a generation behind the U.S.A. and Canada. Courses of lectures and demonstrations in hospital catering, to which hospitals had been invited to send representatives, had been arranged and had been a great success. Much useful information had come out of them, including a suggestion for quarterly refresher meetings, when officers in charge of catering in hospitals might meet to discuss problems. He hoped that the time was not far distant when the difficulties caused by shortage of staff and equipment would be overcome and the feeding of patients and staff would become one of the primary concerns of hospital administrators.

The report of the Radium Committee, which was presented to the meeting by Sir E. Rock Carling, recommended that in future the clinical supervision of radium work in hospitals of the King's Fund should be entrusted to the Radium Commission, which exercised these functions through the whole of Great Britain outside the Metropolitan area. The income of the King's Fund was £325,813 for 1943, and in making this announcement the treasurer said that the Fund had given a good deal of attention to the discussions on the White Paper. "Two things," he said, "stood out as necessary: (1) in the arrangements for hospital services there should be a true partnership between the municipal and voluntary hospital; and (2) voluntary hospitals should continue to receive very large voluntary income."

It may be added as a footnote to the announcement of the £250,000 for Guy's Hospital that this will enable the hospital authorities to start on the plans (which they have had for some time) not only to restore the buildings damaged by enemy action but to bring the bed accommodation up to 1,000; to provide the latest equipment of every kind for diagnosis and treatment; and to build a new college for its medical students and create a great medical teaching centre there. It is also hoped that a "Guy's" will be erected in some country area, within easy access of the parent institute, which will provide for the physical re-education and rehabilitation of patients.

MEDICAL RESEARCH IN EIRE

The report for the year 1943 of the Medical Research Council of Ireland has been issued from its office at 85, Merrion Square, Dublin. The membership of the Council remains unchanged, except that Prof. J. W. Bigger (representing the University of Dublin) resigned owing to his continued absence from Dublin and Prof. W. R. Fearon was nominated by the University to fill the vacancy. During the year the Council continued its policy of assisting scientific investigators in schemes put before it by workers interested in particular problems. Support was also given to schemes of research into public health questions of pressing importance or interest; for example, epidemic goitre in certain areas in Co. Tipperary, and the bacteriology of epidemic diarrhoea and enteritis in Dublin. At the request of the Department of Local Government and Public Health the Council advised on the establishment of a special research into the chemotherapy of tuberculosis, and a grant of £3,000 per annum was voted by the Dail for this scheme; arrangements were also made for investigating the problem of the typhoid carrier. As in past years a number of whole-time grants and grants-in-aid were made to individual workers in various branches of medical science. The report includes a summary of work done by grant-holders during 1943 and a list of their publications.

RELIEF IN EUROPE

Some idea of how UNRRA, the organization of which was outlined in these columns on July 29 (p. 166), is getting to work was given at a press conference recently. The first phase of civilian relief (provisionally estimated to last six months) will be the responsibility of the Allied Armies and the Civil Affairs Branch of the Army. Six to eight public health officers appointed by UNRRA will be attached to the Army's Civil Affairs Branch for this first or military phase and released to UNRRA afterwards. Contact is maintained with the various Allied Governments, particularly with their medical representatives, who know what the problems of relief will be, and it is hoped to appoint further public health officers for purposes of liaison. It was emphasized at the conference that the function of UNRRA is to help re-establish and strengthen a country's national and local health and medical services so that it can deal with its own problems as soon as possible. UNRRA will not force any country to take its help, but will respond to requests. Preliminary discussions have shown that large numbers of doctors and nurses will not have to be recruited; most countries have enough personnel to carry on their normal work. Medical supplies are, however, a different matter. Agreement has been reached between Great Britain and the U.S.A. on drugs and dressings required, methods of packing, labelling, etc. The basic supplies are in two forms. (1) An emergency unit containing drugs, surgical equipment, etc., to meet the requirements of 100,000 people for one month, one hospital of 200 beds with operating theatre and *x*-ray apparatus, and five 40-bed hospitals. These latter are tented cottage hospitals to supply the needs of remote villages. (2) A standard unit with supplies for 1,000,000 people for three months; this unit will form a pool from which actual needs in particular areas can be met.

As already announced, UNRRA has an epidemiological bureau, which will collect and distribute information, and a special division (the Displaced Persons Division) to deal with one of the most urgent problems—the return home of refugees, with all that that means in the way of medical inspection, prevention of epidemics, quarantine, immunization, etc. As UNRRA has special responsibilities for the supply and distribution of food, it has its own nutrition experts, who will investigate on the spot the actual nutritional conditions of the people. Already liaison with the three Balkan missions in Cairo —Yugoslavia, Greece, and Albania—is complete. Three doctors and three senior nurses are now supervising camps and training suitable refugees in nursing, etc., and other staff are waiting to join them.

The Pedestrians' Association states that the 35 m.p.h. general speed limit for motor vehicles that became law in the United States in October, 1942, for conserving rubber has turned out to be the biggest life-saver since the introduction of motoring. According to the U.S. National Safety Council the number of persons killed was reduced to 2,000 a month in the first month of the limit, compared with 3,920 in the corresponding month of the preceding year. In 1943 the total of road deaths was 23,300 compared with 40,000 in 1941. Though the number of cars in use has greatly diminished, a considerable part of the reduction is generally attributed to the speed limit.

Correspondence

Milk for School-children

SIR,—Dr. Alison Glover's letter (July 29, p. 160) omits any reference to one important gap in the scheme. During the school holidays not only is the milk allowance reduced by one-half but it can only be obtained if the child actually consumes it on the school premises. Now the exactions on the time of mothers of young children are at present far too great for them to be able to accompany the children, as requested, to the school premises during the morning. The position is aggravated by the fact that this year not only does the summer milk ration stand at the winter level but dried milk is unobtainable and tinned milk—on "points"—is very scarce. Nor can the last two be considered adequate substitutes for fresh milk. Again, it does not seem reasonable that this holiday milk supply should be limited to elementary schools under the Board of Education. Milk rationing for the whole community has made this distinction, once reasonable, quite unfair.

On inquiry I am informed that the milk no longer consumed at the schools during the holidays is returned to the "pool." Surely a solution would be for the milk to be delivered at the homes on production of the school-child's ration book. It has, I understand, actually been urged against this that the parents might drink the children's milk! So far as my observation goes, exactly the opposite occurs; the parents give up their own milk supply for the children.

A pamphlet entitled *Better Health*, published under the auspices of the Ministry of Health, bears on the cover: "Your Child must have that Extra Milk." Yet other Departments appear to obstruct this being effected.—I am, etc.,

Cambridge. W. LANGDON-BROWN.

Infective Hepatitis

SIR,—I was most interested in the admirable paper on infective hepatitis by Prof. Witts (June 3, p. 739). There are more points of difference between habits of British officers and British other ranks which may be of interest as regards the mode of entry of the virus of infective hepatitis into the body. The British officer is prone to drink plain water to slake his thirst, and when he drinks spirits these are often diluted with plain water—if not out of preference then at least out of necessity. On the other hand, the British other rank rarely drinks plain water: even when ill it is difficult to get him to drink plain water. He "brews" and drinks tea at all times of the day and night, and he will drink beer if he can get it.

It is believed that the liver is the site of election for the virus of infective hepatitis. Syphilis and many of the drugs used in the treatment of syphilis are hepatotoxic agents and so can lower the resistance of the liver to any substance or infecting agent which has a predilection for attacking it. Accordingly it should occasion no surprise that when syphilitics under treatment do develop infective hepatitis the disease is usually more severe—or rather less benign—and of longer duration than it is in non-syphilitics. That is only to be expected.

It seems to me that valiant attempts are being made to prove that syphilitics or others under similar treatment do not suffer from infective hepatitis but suffer from post-arsenical jaundice instead. Why, I cannot fathom, because in lots of cases of so-called post-arsenical jaundice the classical clinical picture of infective hepatitis is obtained. The remainder, I agree, would appear to have an afebrile onset and present themselves with anorexia, nausea, upper abdominal discomfort, and jaundice, etc., but there are numerous cases of individuals who do not suffer from syphilis and who have not been receiving arsenic or other hepatotoxic substances who give a similar history and show similar features. Such cases are diagnosed, quite rightly in my opinion, as of infective hepatitis, even though no febrile disturbance has been complained of or noted. Furthermore, as regards so-called post-arsenical jaundice, surely it is of significance that its incidence in V.D. clinics is less pronounced when separate needles and separate syringes are used for the introduction of arsenicals into the body. It would be strange were the incidence of true post-arsenical jaundice to fluctuate in similar fashion as infective hepatitis with jaundice does in the non-syphilitic population. In addition the fact that the pathological lesions in the liver in infective hepatitis with jaundice and in so-called post-arsenical jaundice are at least similar, if not exactly the same, would appear to support the thesis that they are both one and the same disease. It is not disputed that arsenic may cause liver damage with jaundice, but I do feel that it is erroneous to regard syphilitics, under arsenical therapy, who develop jaundice, as suffering from toxic jaundice due to arsenic and not infective hepatitis.

As regards homologous serum jaundice, it is believed to be different from infective hepatitis, one reason being that the incubation period may be as long as 90 days. It results from the introduction of serum from a human source into the body. So far no one has succeeded in producing infective hepatitis with jaundice in any form of life other than the human being. The serum producing so-called homologous serum jaundice is said to contain an icterogenic agent—presumably the virus of infective hepatitis. Well, if that is so, then the serum must contain antibodies to the virus or infecting agent of infective hepatitis. Not every person having such a serum introduced into the body develops jaundice, and those that do develop so-called homologous serum jaundice may not do so for as long as 90 days. But is this prolonged incubation period not understandable, if, as would appear to happen, an antigen and appropriate antiserum are injected together into a host frequently susceptible to the effects of the antigen, which in this case, I suggest, is the virus of infective hepatitis?

The pathological lesion in the liver is said to be similar, if not exactly the same, in all three types of jaundice. Accordingly it is difficult to believe that they are all not due to the same infecting agent, as the only points of difference are in the soil in the case of syphilitics and the mode of introduction of the virus in so-called homologous serum jaundice.

As regards symptomatology, I feel that pruritus, which though rare is less rare than urticaria and which I have found only in very severely jaundiced patients, is a pre-urticarial state and is indicative of marked impairment of liver function.—I am, etc.,

J. MACKAY-DICK,
Major, R.A.M.C.

Middle East Force.

Military Psychiatry

SIR,—Lieut.-Col. H. B. Craigie's article, "Two Years of Military Psychiatry in the Middle East" (*B.M.J.*, July 22, p. 105), is of much importance and merits careful consideration.

It is stated that an analysis of the admissions at one psychiatric centre during a six-months period showed that as much as 46.2% of neurosis and 37.5% of psychosis cases had had a previous breakdown, and that in addition 38% of all anxiety neurosis and 33% of all hysteria cases showed evidence of "markedly abnormal" personalities before their present breakdown, while 20% showed evidence of a "markedly psychopathic" family history, not easy to obtain under the circumstances; also an analysis of one large series of cases showed that 79% of the neurotic sick had a bad previous history.

Of the total psychotic cases 50% suffered from schizophrenia, a particularly intractable and dangerous disease, while 30% were manic-depressive, a form very liable to recurrence, and about 7% had various degrees of mental deficiency. Of 625 such neurotic and 216 psychotic cases discharged from one hospital during a period of three months, 92% of the former group and 70% of the latter were, it is stated, returned to duty, 61% and 48% respectively to full duty.

There can be little doubt that Lieut.-Col. Craigie is correct in saying that "the potentially 'infective' nature of psychiatric casualties is always a factor of considerable importance," and that "irresolute incompetent men are useless in modern warfare," but surely it is clear that the vast majority of these cases are most unstable "misfits" who should be eliminated, as Lieut.-Col. Craigie says, and who, to quote him again, "can cause difficulties and even disasters out of all proportion to their numbers, and whose presence constitutes a continued if only a potential menace to the morale of the group as a

whole"; and yet, as stated, 92% of 625 such neurotics and 70% of 216 psychotics are sent back to duty during one period of six months!—I am, etc.,

B. H. SHAW,
Late Psychiatric Consultant, Royal Hospital, Wolverhampton, and Staffordshire Infirmary, and Medical Superintendent, Stafford Mental Hospital.

St. Mawes, Cornwall.

Resistance of Gonococci to Chemotherapy

SIR,—Lieut.-Col. D. J. Campbell (July 8, p. 44) draws attention to the severity of gonorrhoea affecting the Army in Sicily and Italy, and makes the statement: "Since the invasion of the Latin countries gonorrhoea has proved intractable to the former accepted methods of treatment by chemotherapy." It is possible that this decrease in the number of sulpha-drug-sensitive gonococci is a phenomenon not solely confined to the Mediterranean theatre of war. In the isolated establishment in which we work naval personnel from all branches of the Service are admitted for treatment. The disease is treated early, all the men reported as soon as they noticed a urethral discharge, and adequate and accurate dosage is assured by admitting the cases to a ward reserved solely for the purpose in sick quarters.

In the accompanying two tables the fresh infections with gonorrhoea admitted during the first six months of 1942 and the first six months of 1944 are contrasted. By a coincidence the identical number—i.e., twenty-three cases—was admitted in both periods and the figures can therefore be compared directly. It will be seen that in spite of the fact that the newer sulpha drugs—sulphathiazole and sulphadiazine—were employed, treatment took half as long again. Twice as many patients needed more than one intensive course, although the drug was usually changed with each new course to find if the organism was sensitive to the different sulpha derivatives.

TABLE I

	Number of Cases Treated	Average Grammes Drug/Case	% of Different Drugs Used	Average Number of Days under Treatment
Jan.-June, 1942	23	32	Sulphapyridine 96 Sulphanilamide 4	13
Jan.-June, 1944	23	48	Sulphapyridine 24 Sulphadiazine 27 Sulphathiazole 49	19

TABLE II

	Number of Cases Treated	More than one Intensive Course	T.A.B. Shock	Irrigation
Jan.-June, 1942 ..	23	5	1	8
Jan.-June, 1944 ..	23	10	5	12

Posterior urethral infection was present in 50% in 1944 as opposed to 35% in 1942, as evidenced by the necessity for irrigation treatment. No fewer than five cases required T.A.B. shock as opposed to only one in the earlier series. Finally, the average number of days required for a cure (including at least two days' observation after treatment) was nineteen in 1944 and thirteen in 1942, although two of the 1942 cases were complicated by a syphilitic infection, whereas the 1944 cases were apparently straightforward. The usual adjuvant methods for investigation and treatment were used where indicated—urethroscopy, sounds, T.A.B. shock, prostatic massage, sitz baths, and so on. All the patients reported exposing themselves to infection within the British Isles. There were no metastatic complications.

One case included in the 1944 series is of special interest. The patient was treated over a period of sixty-eight days with 26 g. of sulphapyridine, 52 g. of sulphathiazole, and 52 g. of sulphadiazine; T.A.B. shock on ten occasions with brisk reactions and irrigations. At the end of this period he still had a purulent discharge containing gonococci. He was therefore put on a continuous intramuscular drip of glucose saline and given 100,000 units of penicillin in twenty-four hours. A further 200,000 units were given over forty-eight hours and no gonococci have been demonstrated since then, although there has been a slight watery urethral discharge on two occasions. If sufficient penicillin becomes available in the future it would be reasonable to use it for gonococcal cases after two intensive courses of a sulpha drug have failed to effect a cure.

It would be unwise to draw conclusions from such small series of cases, but as these infections were contracted under similar conditions it appears that gonorrhoea in this country is becoming progressively more resistant to treatment with sulpha drugs, including the newer variants.—We are, etc.,

SELWYN TAYLOR.
F. C. BARLOW.
Surg. Lieuts., R.N.V.R.

Gonorrhoea on the Continent

SIR,—The type of gonorrhoea in males met by Lieut.-Col. D. J. Campbell in Italy (July 8, p. 44) is exactly the type which was familiar to the venereologist all over middle Europe during the pre-sulphonamide era. Simple uncomplicated gonorrhoea of the anterior urethra was rare; the infection spread rapidly to the posterior urethra, and complications as mentioned by the author were only too frequent. Correspondingly, there was a high number of complications in the female patients. It was thought that a large proportion of the complications could be explained by the early intensive local treatment generally used—namely, syringing or Janet's method in the male patient and intracervical treatment in the female. In contrast to the British treatment with potassium permanganate generally practised, protargol, albargine, and other silver-salt solutions were widely used on the Continent. As Lieut.-Col. Campbell did not subject his men to an early intensive local treatment this explanation has to be abandoned. A difference in the virulence of the gonococcus seems probable. With the advent of sulphonamide treatment the number of complications in the male and female decreased on the Continent, but did not reach such a low level as in this country.—I am, etc.,

Preston. A. FESSLER.

Rheumatic Fever and the Sulphonamides

SIR,—Dr. W. S. C. Copeman's letter (July 22, p. 127) raises an interesting point. Some time ago I wrote to Cmdr. Coburn of the United States Navy as follows:

"I notice that your experiences have been similar to mine and you have found that treatment of tonsillitis with sulphonamide compounds has not decreased the liability to rheumatic fever, and yet sulphonamide administered for long periods at a time in small doses seemed to have a prophylactic effect. I am wondering if you could suggest any explanation as to how these two apparently opposed actions can be correlated."

His reply is given below:

"In answer to your question, this is our opinion: A rheumatic subject is sensitized by an acute streptococcal infection, and the administration of sulfonamide during or subsequent to infection has no beneficial effect because the trigger mechanism is already released. On the other hand, the administration of small prophylactic doses of sulfonamide checks implantation of hemolytic streptococcus and thereby prevents acute infection and the release of the trigger mechanism."

I am in agreement with Cmdr. Coburn's opinion. I would like to point out also that the administration of sulphonamides to acute rheumatic subjects does more harm than good, although I have no doubt as to its prophylactic use when given over long periods of time to rheumatic subjects in a quiescent phase.—I am, etc.,

Royal Infirmary, Edinburgh. A. J. GLAZEBROOK.

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SIR,—Rheumatic fever is at present regarded as a sequel, probably of an allergic nature, to an infection with streptococci—such as tonsillitis or suppurative otitis media. Treatment of an infection of this type with sulphonamides will not prevent the subsequent rheumatic reaction, and the case quoted by Dr. W. S. C. Copeman is thus not surprising (July 22, p. 127). The great value of the sulphonamides in this field, as established in the last few years, lies in the prevention of streptococcal infections, mainly of the upper respiratory tract, in those children that have proved their special sensitivity to streptococcal infections by developing an attack of rheumatic fever. These children are very prone, as we all know, to repeated attacks of streptococcal infections only too often followed by renewed attacks of rheumatic fever with endo-, peri-, and

myo-carditis. When these children are given small doses of sulphonamides continuously from October to July, or even throughout the year, the majority of these streptococcal infections with their rheumatic sequelae can be prevented. The once-bitten heart can be spared further damage, and the lucky ones whose hearts have remained unharmed during the first attack stand a much greater chance of growing up with sound mitral and aortic valves.—I am, etc.,

London, W.1. G. SCHOENEWALD.

Bacterial Endocarditis treated by Sulphapyridine

SIR,—A case of bacterial endocarditis treated by sulphapyridine and resulting in apparent recovery occurred in my practice and would seem to be worth recording.

The patient, a youth of 16, complained of sore throat accompanied by the usual signs and symptoms of acute tonsillitis. This was treated by ordinary antipyretic drugs, and the patient was able to return to work in about two weeks. A week later I was called to see him. He complained of symptoms suggestive of influenza—pain in the back and limbs, temperature elevated, and pulse correspondingly rapid. Despite treatment the temperature remained high and his condition did not improve. I became suspicious of a slight nuchal rigidity and the presence of Kernig's sign was also suspected. He was sent to hospital for investigation. In hospital the cerebrospinal fluid was examined, but no meningococci were seen. The Widal test was also negative. A blood culture revealed the presence of a pure growth of *Staphylococcus aureus*. Changing cardiac murmurs appeared, the heart enlarged, and the abdomen became distended with ascites.

The patient was given sulphathiazole and sent home as he was not a case for a fever hospital. After his return home his condition appeared to be hopeless. I tried to obtain sulphathiazole for him, but at that time it was not available. He was therefore put on sulphapyridine and received two courses each of 0.12 g. His temperature subsided, the cardiac murmurs disappeared, and the abdominal distension gradually diminished. A short time after this he had a recurrence of the pyrexia, which rapidly subsided on the administration of a further course of sulphapyridine.

I saw him recently, two years after his illness. He complains of pectoral pain and some slight breathlessness on exertion. Examination revealed a normal-sized heart, normal in rate of beat and regular in rhythm. There was a slight roughness of the first sound at the mitral area but no definite murmur. I intend to send him for electrocardiographic investigation.—I am, etc.,

Stevenston. R. P. LAWRIE.

Slow Induction of Anaesthesia and Vomiting

SIR,—We are all grateful, I feel sure, for the excellent advices on pentothal administration which have been tendered in your correspondence columns during recent weeks. Dr. Roberts (July 29, p. 161) in particular is to be congratulated upon his sane and lucid expositions on the subject. There is just one point that has been overlooked, however. Although anaesthetists are by now agreed that the administration should be cautious, both in regard to dosage and speed of injection, no one has yet mentioned the fact that slow inductions of any anaesthetic agent predispose to vomiting. Battle and air-raid casualties are unprepared for operation, and only too often have loaded stomachs which show little or no signs of emptying even after several hours' wait, this being due to the fact that digestion is to a large extent inhibited during shock, especially when morphine has been employed. Furthermore, during slow inductions the area of hypersensitivity of the vomiting centre at the lower level of the second stage (Guedel) is traversed slowly, thereby allowing a relatively long period during which the patient is predisposed to vomit. The anaesthetist is, therefore, on the horns of a dilemma; should he inject quickly in order to pass through the area of hypersensitivity in the shortest time possible or induce slowly to avoid aggravating the shocked condition? The answer lies, of course, in effecting a compromise; the first cubic centimetre may, with advantage, be given rapidly, while further administration should remain cautious.

Unless the above facts are fully realized trouble is bound to occur sooner or later. Nothing is more unpleasant and difficult than the clearing of vomitus from the pharynx of a patient with severe injuries to the face, to say nothing of the anxiety caused by watching such a patient becoming progressively anoxic from a persistent laryngeal spasm! This state of affairs is not associated solely with pentothal administrations; it may occur in the course of any anaesthetic given under similar conditions.—I am, etc.,

A. H. GALLEY,
Anaesthetist, E.M.S., Sector IX.

Perineal Tears in Normal Confinements

SIR,—Before drawing the conclusion that "considerable numbers of cases with perineal tears in domiciliary maternity work are left without attention" surely one should consider the following factors.

1. (*a*) The district or private nurse is attending exclusively to one patient throughout the second and third stages of labour. That patient is a woman with whom the nurse has kept in touch for some months; she will also be in contact with patient and relatives for two weeks after the birth. (*b*) The hospital nurse may be in charge and the part charge of 2 to 6 cases in different stages of labour. She may see any one patient for a few hours only, and loses touch when the patient leaves the labour ward. Personal interest is at a minimum.

2. (*a*) In domiciliary work the nurse, the patient, and the relatives are pleased when the case is successfully conducted without a tear. The nurse can get home or to rest with the minimum of delay feeling she has done a good job. If a tear necessitates sending for a doctor there is a lot of additional fuss and worry in the household, and frequently a long delay before everything is "safely over." (*b*) In hospital work, where there is a doctor on tap, a tear is treated as part of the normal routine and very little importance is attached to it.

I consider that these factors tend to produce a smaller number of tears in normal confinements in domiciliary work, the district or private nurse being very intent on avoiding the extra inconvenience to all concerned. Also I think that hospital nurses should be taught to regard a perineal tear as a slightly disgraceful lapse on the part of the person delivering.—I am, etc.,

Liverpool. ISABEL M. GARDNER.

SIR,—Dr. H. E. Humphrys (July 29, p. 160) draws attention to the low percentage of perineal lacerations reported by midwives. The figure 11.3% is ridiculous, even when the proportion of multiparae is high, and my figure for all degrees of laceration and episiotomy is far in excess of the 23.5% of the writer.

Midwives should be required to report all perineal and vaginal lacerations, no matter how trivial. All require repair and the reporting of many cases should not necessarily be taken to reflect against the capabilities of the midwife. Admitting that many lacerations are inflicted by unskilful delivery it should be appreciated that a perineal laceration, which can be repaired, inflicts less permanent harm than an overstretched anterior vaginal wall, even with an intact perineum, a condition which may be associated with intractable stress incontinence of urine.

Finally, let us press for efficient perineal repair and discard the bad old practice of inserting one—or more—stitches to close a laceration involving the perineum, pelvic floor, and posterior vaginal wall. The results of the former are excellent and of the latter very poor.—I am, etc.,

Newcastle-upon-Tyne. WM. HUNTER.

Timing in Schäfer's Method

SIR,—Misleading quotations from *R.A.M.C. Training*, 1935, made by Dr. E. F. Chapman (July 8, p. 57) resulted in criticism of this excellent first-aid manual by Mr. A. M. McMaster (July 22, p. 128). As one who has been called upon to teach first aid to medical personnel, both in this country and with the B.N.A.F., may I be permitted to quote from my own copy of *R.A.M.C. Training*, 1935, chap. 37, para. 677, and thus correct the erroneous impression which has been created? "Lean forward . . . and so produce a firm, downward pressure . . . on the loins . . . this part of the operation should occupy the time necessary to count slowly—one, two. By this means the air . . . is driven out of the patient's lungs. . . . Immediately after this swing backward, slowly releasing the pressure . . . this part of the operation should occupy the time necessary to count slowly—one, two, three."

Most standard textbooks, including the *B.P.*, have their quota of errata, and it is possible that Dr. E. F. Chapman's copy of *R.A.M.C. Training*, 1935, has not been revised in the light of such corrigenda or addenda. This means that, with regard to the timing of Schäfer's method, uniformity in first-aid teaching does in fact exist in *R.A.M.C. Training*, 1935, *First Aid in the R.N.*, and the *R.A.F. Teaching*, as well as in the Royal Life-Saving Society's booklet and that of the St. John *First Aid to the Injured*.

To anyone who is considering making public reference to any of the Service manuals may I therefore suggest that their nearest Service M.O. or medical orderly be approached on the subject beforehand, as the latter are responsible for keeping their manuals revised in the light of recent addenda not always available under present circumstances to civilian medical practitioners through H.M. Stationery Office. This frequent revising of all manuals is more than a duty in the Services; it is inspired by their great aim to disseminate a high standard of first-aid teaching as modified by recent advances, and thus maintain at the lowest possible level the number of war memorials.—I am, etc.,

War Memorial Hospital, Woolwich. SAMUEL HALES.

Results of Colles's Fracture

SIR,—The interesting letters in recent issues (July 8, p. 55, and July 22, p. 126) on the subject of plaster-of-Paris in the treatment of Colles's fractures prompt me to record my own satisfactory experience of the non-plaster method. Some 16 years ago I sustained a Smith's fracture of the right wrist, and, alarmed by the results I had seen in others, I determined to concentrate on a movable joint. From the second day the splints were removed three times a day for massage and exercise. In two weeks I was able to use a knife and fork in public without even a bandage on my wrist; in four weeks I drove my car 60 miles, repeating the journey next day, with no ill effects beyond disturbed sleep for a few nights.

One point I would like to stress is my belief that the successful functional result, with some thickening of the ulnar bone as the only deformity, was in large measure due to the fact that the bones were *x*-rayed and set within half an hour of the accident, thanks to the kindness of my colleagues.—I am, etc.,

Montrose. PHYLLIS EWART.

Dangers of Lay Psychotherapy

SIR,—May I be allowed through your columns to draw the attention of members of the medical profession to a practice which is being attended with increasing dangers. I refer to the rather casual way in which sufferers from neurotic disorders are sent to clinics organized and run by laymen. There are many such clinics in London and the Provinces. The directors are often well-meaning clergymen, who gather around themselves a group of lay helpers. These people have had no training in psychiatry, somatic medicine, and neurology. They are incapable of making a differential diagnosis. Their equipment is a superficial knowledge of Freud and a morbid curiosity.

Recently a ministerial colleague of mine was brought to the verge of suicide through mishandling by a colony of lay psychotherapists. He had been obliged to leave his work owing to a "nervous breakdown." He went from a provincial town to London, where a well-known minister advised him to consult a lay psychotherapist. This gentleman passed my friend on to one of his helpers—a man who worked in an office and practised psychotherapy as a pastime. He proceeded to treat his patient by simple psycho-analysis. A thorough medical examination was not insisted upon, nor was a qualified psychiatrist consulted.

After a few months of this treatment my friend became mentally very ill. He returned to his home town, and immediately consulted the medical superintendent of a mental hospital, who diagnosed at once incipient manic-depressive psychosis.

The gravity of the matter will be seen in the fact that his church authorities required from the lay psychotherapist a report on the minister's condition. The report stated that my friend "would not yield to treatment," and was not suited to the ministerial life—and this after very many years of service as a parson.

It is because of such cases of ruinous mishandling that I would urge the medical profession to investigate very closely the claims and practices of lay psychotherapists. My own conviction is that no person suffering from mental disorder, however slight, should be treated by anyone who is not a recognized medical psychologist.—I am, etc.,

HORACE DOWLING.

Spanish Medicine

SIR,—I should like to intervene with a few considerations in the controversy on medicine in Spain. We may divide the practice of medicine into two different aspects: clinical and research work. Of the former, hardly anything can be made known abroad, and thus Spain, which is a country where the average practitioner maintains a standard at least equal to that of most other European countries, is medically underrated through her actual insufficiency in medical research work.

Yet it may be worth while to enumerate some of the Spanish contributions to medicine from the Middle Ages up to the present time, besides those of Ramon y Cajal and his histological school, already quoted in your paper. Those contributions are the following: Haemostasis through cauterization; first description of the treatment of deformities of mouth and teeth; tracheotomy; discovery of the parasite of scabies; feeding with stomach tube; discovery of ether; first use of tinctures and brandy in therapeutics; discovery of the pulmonary cycle of the circulation of blood (this a century before Harvey); treatment of malaria with bark of cinchona; operative treatment of strangulated femoral hernia; first recorded abdominal laparotomy (14th century); immunization against cholera; operative "cerclage" for kidney injuries; orthopaedic resection of kidney; first blood bank; closed plaster treatment of compound fractures; establishment of the first lunatic asylum; creation of toxicology as a science and paediatrics as a specialty; first description of such diseases as smallpox, measles, paralysis following fracture of spine, serous pericarditis, mediastinal abscess, pharyngeal paralysis, otitis media, intestinal tuberculosis, and chronic miliary tuberculosis.

The list is not exhaustive, and although I do not claim for my country a leading position in medicine, I think it only fair that Spain should be given her fair place among the co-builders of medical science.—I am, etc.,

Manchester. JAMES ELIAS.

Treatment of Gas Gangrene

SIR,—The name of Gen. Mitchiner is itself a guarantee that his recent article (*Journal*, 1944, **2**, 37) will be widely read and may have an important influence on the practice of war surgery. Therefore it is important to draw attention to two of his "thoughts" on gas gangrene: (1) that the disease has occurred less frequently and on the whole less virulently than in the last war; and (2) that antitoxin and sulphonamides seem to have next to no value if the disease is established. Because both views are so directly opposed to others that rest on well-documented evidence (MacLennan, *Lancet*, 1942, **2**, 63, 94, 123, and 1944, **1**, 203; Macfarlane, *B.M.J.*, 1943, **2**, 636; MacLennan and Macfarlane, *B.M.J.*, 1944, **1**, 683) it is to be regretted that Gen. Mitchiner has not thought it necessary to give any reasons for his vitally different conclusions. Meantime it is to be hoped that war surgeons will continue to regard gas gangrene as a dangerous and ever-present menace, and will use antitoxin and chemotherapy in the treatment of the disease. Gen. Mitchiner aims at eliminating complacency and encouraging adequate treatment. His remarks on gas gangrene are a great danger to his own objectives.—I am, etc.,

London. CLAUDE FRANKAU.

H. L. Arbeiter and M. G. Levine (*Minnesota Med.*, 1943, **26**, 1065) report the case of a man aged 34 who was reinfected with pneumococcus meningitis six months after the first infection. A different type of pneumococcus was present with each attach—namely, Type 25 in one and Type 10 in the other. No otitis was evident, but there was a history of a skull fracture two years before the first illness. The patient recovered both times after a combination of sulphonamide and antiserum treatment.

Obituary

L. E. SHORE, O.B.E., M.D.

Many Cambridge men will learn with regret that Dr. L. E. Shore, formerly university lecturer in physiology and Fellow of St. John's College, died in a nursing home at Bath on July 27.

Lewis Erle Shore was born at Churcham, Gloucestershire, on July 5, 1863, the second son of T. W. Shore, F.G.S., a well-known Hampshire archaeologist. He was educated first at Southampton Grammar School and Hartley College, and from St. John's College, Cambridge, where he won double first-class honours in the Natural Sciences Tripos of 1885, entered St. Bartholomew's Hospital. After graduating in medicine in 1887 he returned to Cambridge and was elected a Fellow of his College, proceeding M.D. in 1891. During the 'nineties he contributed to the *Journal of Physiology* a number of papers on peptone and on gaseous metabolism of the liver, and to these columns (jointly with W. H. Gaskell) on the physiological action and effects of chloroform. L. E. Shore was a familiar and much-liked figure in the laboratories and lecture room of the Department of Physiology at Cambridge, and with Sir Michael Foster he wrote the popular textbook *Physiology for Beginners,* which reached a second edition in 1913. For thirty years he served St. John's as junior bursar with quiet efficiency during the difficult period of recovery from a severe decline in value of the lands owned by the College. He worked on the staff of the First Eastern General Hospital, which was set up at Cambridge during the last war, and his main care was the neurological patients. At the Annual Meeting of the B.M.A. held at Cambridge in 1920 he was vice-president of the Section of Neurology and Psychiatry. His elder brother, Dr. T. W. Shore, now in retirement, is emeritus lecturer on biology at St. Bartholomew's, and was warden, and later dean, of the Medical College for very many years. His nephew, Dr. T. H. G. Shore, is physician to the Prince of Wales's Hospital, Plymouth.

Dr. FRANK BRYAN, who died on June 29 (writes L. O. L.), was born at Prestwich, near Manchester, in 1877, and educated at Clifton College, where he became a noted gymnast, winning all the belts and the Carlin Cup and representing his school twice at Aldershot. From Clifton he passed to King's College, Cambridge, where he promptly won a place in the college boat and, I understand, he was well in the running for a university blue. He took his B.A. with second-class honours in the Natural Sciences Tripos of 1898, and from Cambridge went to St. Mary's Hospital, London. After graduating in medicine he held appointments at the Middlesex County Asylum, Tooting, and at the Derby Royal Infirmary. He bought a practice at Selston, Notts, but on the outbreak of the last war he joined the R.A.M.C., and for over three years served with the rank of captain in Bombay, partly as an embarkation officer, and also in a staff appointment at the Alexandria docks. Frank Bryan was twice seriously ill, and to enable him to have a short rest he was made personal surgeon to Sir Charles Munro for a trip to Basra at the end of the war. When he returned home he became one of the original medical officers under the National Health Insurance scheme, and later went to Plymouth until he retired. From 1938 he bravely fought failing health. He was modest and unassuming, with a keen sense of humour, always cheery, and ever ready to take part in the affairs of Tavistock, where he lived.

Dr. BERNARD KELLY, who served the Royal United Hospital, Bath, very faithfully for a number of years as visiting anaesthetist, died suddenly on July 5, aged 58. He studied medicine in Dublin and took the diplomas of the Irish Royal Colleges in 1912. He was with the R.A.M.C. in Palestine during the last war, from 1916 to the beginning of 1919, mostly in casualty clearing stations. Before going to Bath he practised at Exeter and was honorary anaesthetist to the Royal Devon and Exeter Hospital. In addition to his post at the Royal United Hospital, Dr. Kelly was honorary anaesthetist to the Ear, Nose, and Throat Hospital and to the Eye Hospital at Bath. He is survived by his widow, and by a son and a daughter, who are both serving over-seas, the one as squadron leader in the R.A.F. and the other in Queen Alexandra's Imperial Nursing Service Reserve.

Dr. REES PHILLIPS, who practised for many years in Kennington Road, London, S.E., died on July 16. He was born at Llanboidy, North Wales, in 1878, and from Aberystwyth College went to study medicine at the Middlesex Hospital, graduating M.B.Lond. in 1902, B.S. in 1907, and M.D. in 1912. His early appointments were those of obstetric house-physician at the Middlesex, house-surgeon to the Brighton Hospital for Women, and assistant medical officer to the Lambeth Infirmary. He had been surgeon to the M Division of the Metropolitan Police, public vaccinator for the borough of Lambeth, and before the last war was M.O. to the 24th Battalion of the London Territorial Regiment. During the war he served in Gallipoli, Egypt, and Palestine, and reached the rank of lieut.-col., R.A.M.C.(T.A.); he was mentioned in dispatches and awarded the Territorial Decoration. On returning to civilian life he took the D.P.H. in 1920 and the D.M.R.E. in 1926. Dr. Rees Phillips joined the B.M.A. in 1913.

We regret to announce the death on July 31, at his home in Southcote Road, Reading, of Dr. HENRY JOSEPH MILLIGAN, *M.C.*, who had been medical officer of health and school medical officer for the county borough of Reading since 1920. He took his medical course at the University of Glasgow, graduating M.B., Ch.B. in 1905, and proceeded M.D. in 1914 after taking the Cambridge D.P.H. Dr. Milligan's first appointment was that of assistant medical officer to the Southern Hospital, under the old Metropolitan Asylums Board. He returned to Glasgow as senior assistant medical officer at the Eastern District Hospital, and next moved to Bootle to take up the posts of deputy M.O.H. and tuberculosis officer. Meanwhile he had been called to the Bar as a member of Gray's Inn. During the last war he served with the R.A.M.C. and won the Military Cross, retiring with the honorary rank of major. He was a Fellow of the Society of Medical Officers of Health and acted as examiner for the Royal Sanitary Institute, of which also he was a Fellow. He published articles on infant welfare and the health of school-children and on the supervision of pasteurized milk, and was responsible for eighteen annual reports on the health of Reading. Dr. Milligan had long been a member of the B.M.A. He represented his Division at the Annual Meeting of the Association in 1923, and was a member of the Central Council from 1932 until 1938. He served on the Public Health Committee for the same period and on a number of subcommittees and *ad hoc* committees at headquarters, including the Maternity and Child Welfare Subcommittee.

The Services

Major-Gen. Sir Ernest Cowell has been awarded the American Legion of Merit for distinguished service to the Allies. He recently came from the Middle East to Northern Command as Deputy Director of Medical Services.

Majors (Temp. Lieut.-Cols.) W. J. Young, M.B.E., I.M.S., and R. B. Davis, I.A.M.C., have been awarded the D.S.O., and Capt. (Temp. Major) R. K. Pilcher, Capts. F. R. Glover and H. Pozner, R.A.M.C., and W. Thomson, I.A.M.C., have been awarded the M.C. in recognition of gallant and distinguished services in Burma.

CASUALTIES IN THE SERVICES

Major LESLIE ROLAND JORDAN, who died of wounds on July 19 in Normandy, joined the R.A.M.C. in 1940 and finally was commanding officer and surgeon of a field surgical unit. He studied medicine at Bristol, graduated M.B., Ch.B. of the University in 1931, and obtained the F.R.C.S. diploma in 1934. After holding house appointments at the Bristol Royal Infirmary and Royal Hospital for Sick Women and Children he was R.M.O. at the National Temperance Hospital, London, and then settled in practice at Muswell Hill, becoming surgeon to the Hornsey Central Hospital and clinical assistant at the Central London Throat and Ear Hospital. He joined the B.M.A. immediately after qualifying.

A. H. C. writes: Capt. S. C. H. HOOD, R.A.M.C., was educated at Tonbridge School, where he had a brilliant career, both entering and leaving with exhibitions, the latter to Caius College, Cambridge. He came down from Cambridge in 1939 after only two years, forsaking a certain First in the Natural Sciences Tripos because he felt it his duty to qualify and get into the Services as soon as possible. He did his clinical studies at the Middlesex Hospital, where he collected no prizes merely because he entered for none, yet had he tried he would have done great things clinically. He must have been among the first troops to land in France, and soon earned the admiration and affection of his fellow officers and men by his bravery in battle and selfless application to the job in hand. Before his death in action he was recommended for the Military Cross.

Wounded.—Temp. Major D. S. Clark, War Subs. Capts. R. C. Droop, T. H. Harrison, W. R. Lamb, Lieut. V. O. G. Smyth, R.A.M.C.

Killed on active service in Normandy.—Capt. A. Ramage, R.A.M.C.

DEATHS IN THE SERVICES

The following tribute to Surg. Rear-Adml. G. L. BUCKERIDGE comes from Surg. Vice-Adml. Sir Basil Hall: For very few men is it possible to gain universal popularity and affection and to be free from the enmity of others, but Guy Buckeridge achieved this by his charm of manner, courtesy, and complete freedom from affectation. His medical education was at Guy's, and soon after qualifying in 1903 he joined the Royal Navy. In this Service he had a distinguished career, his last appointment, before retiring under the age limit, being that of surgeon rear-admiral in charge of the R.N. Hospital at Haslar. Buckeridge had a flair for administrative work, and for several years was employed in this duty at the Admiralty, where he was at one time Deputy Medical Director-General. His legal type of mind, judgment, and great aptitude for seeing the possible consequences and contingencies arising from any decision or proposed regulation made his opinion and advice invaluable. After retirement he held an appointment with the International Council for Non-intervention in Spain, in which his experience and character were great assets in dealing with difficulties inherent in an international organization. During the present war he acted as chairman of a Medical Examining Board at Acton. Buckeridge was an extremely well-read man, and had a vast and accurate knowledge of French and English history. Possessed of a very acute sense of humour, and a quaint manner of expressing his opinions of men and matters, he was a most delightful companion. His sudden death on July 14 has created an empty space in the lives of all those who were happy to be his friends.

Universities and Colleges

UNIVERSITY OF OXFORD

In a Congregation held on July 15 the following medical degrees were conferred:

B.M., B.CH.—E. H. Brown, L. M. Rose, H. K. R. Kilpatrick, L. G. Kilpatrick, F. D. Chandler, G. E. L. Graham, G. S. Jones, Mrs. S. N. Byron-Moore. *In absence:* R. S. Wilkinson, J. S. Oldham, S. Blaxland, F. O'N. Daunt, A. R. Dismorr, H. J. L. Marriott, J. Roberts, V. H. Wheble, R. R. de Mowbray, P. V. Wadworth.

UNIVERSITY OF LONDON

The following have passed the examinations for the Academic Postgraduate Diploma in Medical Radiology: Patricia P. Franklyn and David Raeside.

The following have completed the Third (M.B., B.S.) Examination for Medical Degrees, April, 1944:

Honours.—E. A. Fairburn (distinguished in pathology), J. C. Taylor (distinguished in applied pharmacology and therapeutics).

Pass.—Gwladys V. S. Aldridge, R. A. Allen, J. Alterman, E. A. Andrade, A. A. Baker, P. E. Baldry, A. P. Bentley, H. Bentley, H. Binysh, C. C. Bowley, E. Brenman, J. L. Brennan, P. R. Bromage, R. Cannon, M. B. Carson, B. Cashman, P. R. R. Clarke, T. I. A. Clarke, M. D. M. Collins, M. D. Cremin, Ada I. Date, Barbara S. Davies, J. E. Davies, C. E. Dent, Pamela H. Dickie-Clark, Mary P. Douglass, D. C. H. Draffin, D. V. Evans, Winifred J. Ferraby, R. Finney, I. H. Fothergill, J. Fry, A. J. P. Graham, G. Grant, Audrey M. Gray, I. R. Gray, B. V. I. Greenish, G. A. Griffin, Ruth M. Haslam, G. Herington, A. T. Hunt, Lois E. Hurter, Rosemary Jackson, P. S. Jaikaran, W. C. Johnson, June M. Kingan, S. M. Kingsley, C. H. R. Knowles, G. de J. Lee, H. L. Le Vavasseur Dit Durell, M. C. W. Long, Anne I. Mackensack, Joan Martin, R. Merryweather, K. H. Miller, P. J. W. Monks, Stella M. Murray, Catherine A. Neill, J. A. Nissim, A. J. P. Oldham, D. B. L. Paithorpe, P. E. S. Palmer, B. W. T. Pender, W. J. Penman, H. A. Philcox, Ella Preiskel, J. H. Rey, L. P. Ribet, Charlotte Saba, E. S. Shalom, Angele M. P. Snow, Rachel F. E. H. Spicer, F. M. G. Stammers, D. M. Stevens, J. W. Stewart, I. H. Syed, P. M. Vasey, Patricia E. Q. Walsh, J. C. P. Weber, G. P. West, J. D. A. Whitelaw, K. C. Willett, T. J. Wilmot, J. L. Winkler, A. M. Wood, N. L. Yhap.

U.C.H. MEDICAL SCHOOL

The following scholarships, exhibitions, and prizes have been awarded at University College Hospital Medical School:

Goldsmid Entrance Scholarships: (1) J. P. Johnston, (2) Miss E. A. Bevan John; *Goldsmid Entrance Exhibition:* J. P. Mostyn; *Filliter Entrance Scholarship in Pathology:* W. G. Spector; *Atchison Scholarship:* A. N. Smith; *Atkinson Morley Scholarship:* D. A. W. Edwards; *Magrath Scholarships:* Medicine, R. E. Wirgman; Midwifery, E. A. Andrade; *Erichsen Prize and Alexander Bruce Gold Medal:* O. L. Wade; *Liston Gold Medal:* Miss M. Farquharson, Miss M. E. Hughes; *Fellowes Gold Medal:* Miss M. E. Hughes; *Fellowes Silver Medal:* D. W. H. Barnes; *Wilfred Trotter Medal:* Miss M. E. Hughes, S. G. A. Forsyth; *Tuke Bronze Medal:* C. E. Dent; *Suckling Prize in Obstetrics and Gynaecology:* Miss S. M. Howarth and Miss P. M. Lloyd; *Filliter Exhibition in Pathology:* D. A. G. Galton.

UNIVERSITY OF GLASGOW

A series of meetings will be held in the Department of Ophthalmology on Wednesdays, from Sept. 6 to 27, at 8 p.m. The meetings are open to all medical practitioners and senior students interested in ophthalmology.

ROYAL COLLEGE OF PHYSICIANS OF LONDON

At a quarterly Comitia held on July 27, with the President, Lord Moran, in the chair, the following were elected officers for the ensuing year: *Censors,* A. C. D. Firth, George Graham, W. H. Wynn, Donald Hunter; *Treasurer,* C. M. Hinds Howell; *Registrar,* H. E. A. Boldero; *Assistant Registrar,* A. A. Moncrieff.

The following awards were announced: The Gilbert Blane Gold Medal to Surg. Cmdr. W. A. Hopkins, R.N., and the Bisset Hawkins Medal to Brig. J. A. Sinton for his work on preventive medicine and particularly malaria. Lord Moran was appointed representative of the College on the General Medical Council. Dr. John Parkinson was appointed Harveian Orator for 1945 and Dr. W. Russell Brain Bradshaw Lecturer for 1945. Viscount Dawson was re-elected representative of the College on the governing body of the British Postgraduate Medical School, and Dr. W. G. Wylie on the Child Guidance Council. Sir Edmund Spriggs will deliver the Harveian Oration on Oct. 18.

The following, having satisfied the Censors' Board, were elected to the Membership of the College:

B. G. C. Ackner, M.B., R.A.F.V.R.; N. H. Desai, M.B.; H. P. Goldman, M.B.; J. F. Goodwin, M.B.; K. Hazell, L.R.C.P., R.A.F.; P. G. Holman, M.B.; E. B. Jarrett, M.B.; Robert Moore, M.B.; F. J. P. O'Gorman, M.B., R.A.F.V.R.; Audrey Palmer, M.B.; F. Post, M.B.; Llywelyn Roberts, M.D.; M. Roth, M.B.; P. H. Sanderson, M.B.; V. K. Summers, M.D.; W. F. T. Tatlow, M.B., R.A.M.C.; B. E. Tomlinson, M.B.; G. Watkinson, M.B.; D. N. White, M.B.; B. Wolman, M.B.

Licences to practise were conferred upon the following 149 candidates (including 16 women) who had passed the Final Examination in Medicine, Surgery, and Midwifery of the Conjoint Board and have complied with the necessary by-laws:

J. C. L. Adams, M. S. Adams, V. Altman, B. E. Andrews, W. E. Anwyl, G. D. Arthur, J. C. Bagchi, Brigid M. Balfour, Margaret M. Ballantine, D. A. Barker, W. R. Barrett, H. H. E. Batten, T. C. Beard, R. G. Bird, D. H. Blake, J. T. Blois, Kathleen A. C. Bowen, Johanna E. G. Brieger, E. H. Brown, D. F. J. Brown, C. F. Bunting, I. J. Carré, M. R. Chaudhuri, R. E. Connor, P. B. S. Cooper, P. J. W. Corser, W. E. Crocker, G. David, D. L. Davies, P. D. B. Davies, J. M. Davis, D. Dencer, Stella D. H. De Zilwa, A. R. Dismorr, C. D. Drew, R. D. Eagland, E. W. W. Ellis, H. M. Emrys-Roberts, G. F. Ensor, D. G. Farquhar, M. A. Floyer, A. C. Frazer, K. B. N. Freeman, P. R. French, T. P. S. Frew, Joan G. Garai, J. Garber, Kathleen F. Garside, Barbara W. Gerrard, Beryl J. Goff, I. H. Gordon, W. Gordon, A. H. Griffith, G. J. Haas, J. L. Hansell, P. Hansell, J. A. Harrington, W. C. Harris, F. H. Hedges, F. N. Hicks, J. C. Higginson, M. D. Hillel, I. S. Hodgson-Jones, C. L. Hollick, M. S. Hughes, M. R. Hunt, Brenden B. Jacobs, L. J. R. Joel, Christine M. H. Jones, C. C. Kennedy, P. F. Kennish, L. Komar, J. P. MacI. Kyle, A. G. Leatham, K. W. Leech, Leslie Levy, M. L. Levy, H. J. Lewis, A. V. Lillywhite, M. R. Liver, R. G. Lomax, J. D. Loughrey, Muriel J. Lowe, J. W. McConachie, P. D. C. Mackay, I. A. Magnus, W. Marshall, F. G. W. Marson, J. R. Mayers, E. T. G. Meade-Waldo, R. I. Meanock, H. G. Middleton, S. Moller, G. Monckton, D. M. Montgomery, D. J. Morton, C. P. Moxon, A. H. R. Muir, A. O. Nichols, J. M. Norman, K. O. M. O'Meara, Faye Orde, J. D. Orme, H. W. Palmer, G. R. Parry, D. R. Patchett, B. K. Patel, G. Q. Patton, I. C. Peebles, J. T. Pembleton, Nancy B. Penney, A. J. S. Perfect, A. Persey, Mary Ransome, J. K. Ratcliffe, W. T. D. Ray, Patricia L. Read, J. H. T. Rees, L. E. L. Ridge, P. K. Robinson, B. S. Rose, K. W. Ruppel, S. A. Sachak, A. C. E. Sandiland, F. D. Schofield, B. O. Scott, J. C. Sherris, C. H. Smith, P. S. Smith, W. E. Smith, J. M. Starks, J. C. Stephens, K. W. Symons, M. Symons, Mary J. L. Taylor, W. K. Taylor, M. Thomas, R. H. Thorp, K. Till, G. M. Turner, A. S. Wallace, P. T. J. C. P. Warner, P. R. Westall, J. W. Weston, E. C. B. White, H. P. B. Whitty, N. P. L. Wildy, T. R. Williams, N. L. Yhap.

Diplomas

DIPLOMA IN PHYSICAL MEDICINE.—F. S. Cooksey.

Diplomas in Public Health (4), Psychological Medicine (7), and Laryngology and Otology (5) were granted, jointly with the Royal College of Surgeons of England, to the candidates whose names appear in the report of the meeting of the Royal College of Surgeons of England in the *Journal* of July 29 (165), and Diplomas in Anaesthetics (34) to those whose names appear in the report of the meeting in the *Journal* of June 17 (p. 830).

ROYAL COLLEGE OF SURGEONS OF ENGLAND

F.R.C.S. IN OPHTHALMOLOGY

The following letter has been sent by the President of the Royal College of Surgeons of England to the Council of British Ophthalmologists:

"The Council of the Royal College of Surgeons have given careful consideration to the request of the Council of British Ophthalmologists that they should grant a special diploma of Fellow of the College as a higher diploma in ophthalmology. They agree with the view that a special examination would be more suitable than the usual final examination for the Fellowship of the College for those specializing in this important branch of practice. It is also clear to the Council that the present regulations for the 'F.R.C.S. with Ophthalmology' are too exacting, in that candidates for this diploma are required first to have passed the usual final examination of the Fellowship. The Council therefore agree that there should be a special final examination for the Fellowship of the College for those specializing in ophthalmology, and that, since the standard of this examination would be comparable with that of the usual final examination, successful candidates should rank as Fellows of the College and that there should be no distinction in regard to status

or privileges between Fellows thus admitted and those admitted under the present regulations. The Council have no right under the existing Charters to make this arrangement, but they are prepared to seek powers to grant a diploma of F.R.C.S. in Ophthalmology to candidates who have passed the primary examination for the Fe owship and a special final examination on the lines submitted by the Council of British Ophthalmologists. It is anticipated that two ophthalmic surgeons would be required on the Examining Board, and it is proposed that they should be Fellows of the College and additional members of the Court of Examiners. Two other surgical members of the Examining Board would be selected from the general surgeons on the Court of Examiners and they would take part in some of the oral parts of the examination."

ROYAL COLLEGE OF OBSTETRICIANS AND GYNAECOLOGISTS

The quarterly meeting of the Council was held in the Medical Institution, Liverpool, on July 29, with the President, Mr. Eardley Holland, in the chair.

Mr. Eardley Holland was re-elected President to take office in October next, and the following officers were also elected: Vice-Presidents, Prof. William Gough and Prof. D. Dougal; Hon. Treasurer, Dr. J. P. Hedley; Hon. Secretary, Mr. G. F. Gibberd (Mr. W. Gilliatt was appointed deputy honorary secretary in the absence of Mr. Gibberd on active service); Hon. Librarian, Mr. F. Roques; Hon. Curator of Museum, Mr. A. W. Bourne.

The following were elected to Fellowship: Dr. Leonard Colebrook, Prof. Leonard G. Parsons ; and the following candidates were elected to Membership: J. N. I. Emblin, J. P. Erskine, A. H. Maclennan, Agnes M. Stewart, Elsie M. Terry, Irene M. Titcomb.

Christina McD. McTaggart was admitted to the Membership *in absentia*.

Medical Notes in Parliament

Parliamentary Medical Group

The Parliamentary Medical Group have held three meetings during the week ended July 29. Among other subjects they are exploring the possibility of postgraduate facilities being made available in medical schools and universities in this country for selected Indian medical graduates after the war. At their last meeting they received representations from associations concerned with the treatment of tuberculosis, concerning the difficulties resulting from the shortage of domestic and nursing staff of institutions caring for tuberculous patients.

India's Population and Nutrition

MR. PETHICK LAWRENCE opened on July 28 a debate on India. He said that if the population of India increased at the present rate famine might recur. Col. ELLIOT said that in the East it took four families on the land to feed one family in the town. In the West one family on the land fed four families in the town. India raised only enough food to keep half her population alive after the age of 22, yet her population was going up at the rate of 1,000,000 every two months.

Prof. A. V. HILL said that in India food was two-thirds of what would be necessary for a decent standard of life. Disease and malnutrition so worked together that any internal strife and disorder, or any epidemic like that of 1918, might produce a major catastrophe. If health measures improved and food production and distribution were bettered, the increase would become 7,000,000 or 9,000,000 per annum. How could food supplies catch up with so riotous an urge to reproduce? That problem required complete co-operation all round, with hard thinking and hard work. Sir STANLEY REED said the growth of the Indian population was now out of control. There had been famine in 1891 ; famine in 1899 with plague ; later the great influenza epidemic. In the following 20 years there were none of these disturbances. Good administration swept away the forces which had kept the population within reasonable proportions.

Mr. AMERY said the causes of the Bengal famine and of the epidemics which followed were to be investigated by a Commission with Sir John Woodhead as chairman and with Dr. Aykroyd, Director of India's Nutritional Research Laboratory, among its members. This investigation would cover the problem of famine and its prevention all over India. In Bengal last year 700,000 human beings died directly from starvation or from endemic diseases which broke out on a large scale where there was malnutrition. The Health Survey Development Committee under Sir Joseph Bhore was studying public health, nutrition, maternity and child welfare, housing, water supply, and malaria and other endemic diseases. It was expected to report this year.

Riboflavin Content of Beer

On Aug. 2 Mr. KEELING asked the Lord President of the Council the grounds on which the Advisory Committee on Alcohol, appointed at his request by the Medical Research Council, decided that alcoholic beverages were not significant sources of any of the known vitamins, in view of the statement in Nutrition Bulletin No. 8 that the rarity of symptoms of deficiency in the British people was partly attributable to the presence of riboflavin, vitamin B_2, in beer. Mr. ATTLEE replied that the committee originally appointed by the Central Control Board (Liquor Traffic), and later reconstituted by the Medical Research Council at the request of the Home Office, produced the book *Alcohol : Its Action on the Human Organism* many years before knowledge of riboflavin was available. Information on the point mentioned was not available even in 1938, when the latest edition of the book was published. Recent publications indicated that riboflavin was present in beers, but it was clearly impossible to say with assurance to what extent the rarity of symptoms of deficiency in the British people was in fact due to beer drinking, particularly since there was no evidence of a general deficiency of this vitamin in non-beer-drinkers.

Pneumoconiosis : Preventive Measures

On Aug. 1 Mr. J. GRIFFITHS asked the Minister of Fuel and Power whether, having regard to the considerable increase in the numbers of men who were being certified as disabled by pneumoconiosis, he would make a statement of the steps now being taken to prevent this disease, and at how many collieries effective preventive measures had been adopted. Major LLOYD GEORGE circulated the following reply: In the coal faces the most effective measure so far developed is usually the application of water—in quantity which, to avoid other dangers, must be carefully controlled—either by infusion under pressure through boreholes into the coal before it is worked, or by "wet cutting," in which a jet of water is directed on to the pick as the coal-cutting machine works along the face. These two methods have been developed and applied in South Wales. Special arrangements have been made to ensure to the collieries on a high priority basis the large quantities of water piping required. In hard-heading work the older methods of wet-drilling or collecting the dust produced by dry-drilling continue to be employed, and mist sprays are used to suppress dust caused by blasting.

Food Supplies in Greece

On Aug. 1 Mr. HARVEY asked the Parliamentary Secretary to the Ministry of Economic Warfare whether he would give the latest available information on the position of the civilian population in Greece in regard to food supply and the measures being taken to relieve grave malnutrition. Mr. FOOT replied: The harvest has just been gathered, so there has been a recent improvement. Nevertheless, it would be misleading to generalize about the food situation in Greece as a whole since conditions vary widely between the larger cities, the provinces, especially those areas where there is active guerrilla warfare, and the islands. In those areas which are the scene of active conflict, food supplies remain a very serious problem. In certain districts conditions have been aggravated by the action of the German authorities in destroying or seizing native produce. Moreover, military operations and the requisitioning of lorries involve considerable interference with transport and distribution. Conditions of acute shortage continue among a large part of the island population, owing to the great difficulty of sending supplies. The House is already aware that relief foodstuffs are being shipped to Greece at the rate of approximately 32,000 tons a month. In addition, arrangements have recently been made for supplies to be sent in Turkish coasting vessels to Mitylene and Chios, and the first cargo has been delivered.

Notes in Brief

The Royal Assent was given on July 27 to the Food and Drugs (Milk and Dairies) Act.

Between July 1, 1943, and June 30, 1944, 4,762 applications were received by the Medical Board under the Coal Mining Industry (Pneumoconiosis) Scheme. Of these, 1,328 were certified and 1,16[illegible] were refused certificates. The number still undecided by the Medical Board on June 30 was 2,235.

No surplus olive oil is available from Italy. There is enough olive oil in the United Kingdom to meet requirements under medical certificates, but no more.

No. 29

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended July 22.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each Infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1944					1943 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever	46	3	20	3	2	44	3	22	—	3
Deaths		—	—				—	1		
Diphtheria	471	23	132	74	14	591	38	136	62	16
Deaths	4	1	—	1	1	12	—	1	3	—
Dysentery	151	7	91	—	—	105	13	139	—	—
Deaths				—	—				—	—
Encephalitis lethargica, acute	3	—	—	—	—	6	1	—	—	—
Deaths		—					1			
Erysipelas			36	5	3			37	7	2
Deaths		—					—			
Infective enteritis or diarrhoea under 2 years				14					34	
Deaths	40	7	17	4	—	46	6	7	18	11
Measles*	2,401	90	58	135	20	2,486	135	41	16	10
Deaths	1	—	1	—	—	1	—	3	—	—
Ophthalmia neonatorum	82	7	12	—	—	77	4	14	—	—
Deaths										
Paratyphoid fever	4	—	1(B)	—	—	9	1	1	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenzal†	374	18	—	—	5	445	24	2	—	3
Deaths (from influenza)	13	1	—	1	—	5	—	—	1	—
Pneumonia, primary			159	18				166	6	
Deaths		25		4	2		19		6	8
Polio-encephalitis, acute	2	—				—	—			
Deaths		—					—			
Poliomyelitis, acute	6	—	3	—	—	5	1	3	3	—
Deaths		—					—			
Puerperal fever		2	13		—		3	14		—
Deaths										
Puerperal pyrexia‡	143	7	9	2	2	152	13	18	2	3
Deaths		—					1			
Relapsing fever	1	—			—	—	—			—
Deaths										
Scarlet fever	1,461	56	178	24	54	2,099	211	189	44	34
Deaths	—	—	—	—	—	—	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths				—	—				—	—
Typhoid fever	21	1	3	14	—	10	—	—	14	—
Deaths	1	—	—	—	—	2	1	—	—	—
Typhus fever	—	—	—	1	—	—	—	—	—	—
Deaths				—	—				—	—
Whooping-cough	2,157	139	38	50	8	2,081	121	53	22	53
Deaths	13	—	1	—	—	6	—	4	1	1
Deaths (0–1 year) Infant mortality rate (per 1,000 live births)	269	31	64	24	15	275	42	55	42	34
Deaths (excluding stillbirths)	3,971	756	606	161	110	3,613	536	521	175	101
Annual death rate (per 1,000 persons living)			13·9	10·4	§			11·7	11·5	§
Live births	7,500	768	956	390	289	6,677	774	1,005	368	313
Annual rate per 1,000 persons living			19·4	25·3	§			20·5	24·2	§
Stillbirths	212	17	35			195	18	28		
Rate per 1,000 total births (including stillborn)			35					27		

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

§ Owing to evacuation schemes and other movements of population, birth and death rates for Northern Ireland are no longer available.

EPIDEMIOLOGICAL NOTES

Discussion of Table

In *England and Wales* during the week the incidence of most infectious diseases fell; whooping-cough returns were 166 fewer than last week, measles 135, acute pneumonia 63, and diphtheria 20. There were 67 more cases of scarlet fever than last week, and 13 more of typhoid.

The small increase in scarlet fever was general throughout the country. The incidence of whooping-cough fell particularly in Kent, Yorks West Riding, and London, where respectively 61, 45, and 42 fewer cases were reported. Increases of 48 and 23 were recorded in Carmarthenshire and Glamorganshire. The decline in measles notifications was most pronounced in the south, Kent reporting 70 fewer cases than last week, Wiltshire 57, Middlesex 44, and London 40. Durham had 82 more cases than last week, and Southampton 86; in Portsmouth C.B. the cases rose from 21 to 88.

Two fresh outbreaks of dysentery were reported during the week: Wiltshire, Amesbury R.D. 15, and Dorset, Wareham and Purbeck R.D. 25. The only other large return was Surrey, 15 (Epsom and Ewell M.B. 9). The totals for London and Lancashire were the very low figures of 7 and 6 respectively.

Twenty-one cases of typhoid were notified, the largest weekly total since January, 1942. The cases were distributed throughout eleven counties; the largest return was that of Cambridge M.B. 5.

In *Scotland* there was an increase of 43 in the incidence of diphtheria, and of 23 in that of dysentery. The greatest local rise in diphtheria was in the City of Glasgow, from 22 to 48. The rise in dysentery was due to an increase in existing outbreaks; the chief centres of infection were Glasgow 25, Edinburgh 18, Lanark County 22.

In *Eire* a case of typhus was reported from Galway, Oughterard R.D.

Week Ending July 29

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,530, whooping-cough 2,151, diphtheria 461, measles 2,352, acute pneumonia 450, dysentery 149, paratyphoid 11, typhoid 18.

Medical News

A sessional meeting of the Royal Sanitary Institute will be held at the County School, adjoining the Town Hall, High Road, Tottenham, on Friday, Aug. 18, at 3 p.m. The programme consists of notes by the Borough Engineer and Surveyor, Medical Officer of Health, and Chief Sanitary Inspector, on (1) the replanning of Tottenham, (2) the health services in a replanning scheme, and (3) reconstruction and maintenance of houses as an immediate post-war problem. A Town Planning Exhibition will be on view in the Town Hall before the meeting.

The Ministry of Food announces that the monthly allowance of dried bananas made to approved cases of coeliac disease has been reduced from 14 lb. to 7 lb. In the light of experience the Ministry's medical advisers consider this quantity of dried bananas is adequate. Applications for the allowance supported by a detailed medical certificate should be made to the local Food Office.

The Minister of Health has sent the following message to hospital staffs: "I have been much impressed during the past few weeks by the smooth efficiency with which the hospitals and casualty services of the Emergency Scheme have carried out their duties. These have included the reception, transport, and treatment of casualties arriving in this country from the battle area in Western Europe and of civilians injured by the flying bombs; in addition to the casualties arriving from other theatres of war and the various other categories of patients for whom the Emergency Medical Services are responsible. This reflects the utmost credit on the medical, nursing, and other staffs, and also on the administrative officers. Many of them have carried out their duties as mobile surgical teams and reinforcements under difficult circumstances, while others have shouldered heavy extra burdens in order that these reinforcements might be released for service where they were most required. The country owes a deep debt of gratitude to all members of hospital staffs for contributing so much in this and other ways to the success of the Emergency Hospital Scheme during this important phase of the war. The signal service they have given and the public spirit they have shown, often under conditions of difficulty, are especially gratifying to me as Minister of Health. I am most grateful to all concerned."

Major-Gen. W. H. Ogilvie has been appointed a director of the Clerical, Medical and General Life Assurance Society to fill the vacancy caused by the death of Sir Cuthbert Wallace.

Diabetics living in safer areas are asked by the Ministry of Health to offer billets to diabetic children and other fellow-sufferers eligible for evacuation from London and Southern England areas exposed to flying bomb attacks. As their lives depend upon a regulated diet and daily insulin injections, it is not possible without grave risk to include diabetic children or adults in officially organized parties. Householders with experience of diabetic cases who would accommodate and look after a diabetic child alone or with its mother are asked to send their offer to the Diabetic Association, 9, Manchester Square, London, W.1. Similar accommodation is needed for elderly and infirm diabetics who have lost their homes through bombing. Persons offering accommodation are asked to state the age and sex of those they are willing to receive. Others members of the evacuation priority classes who, because of their diabetic condition, cannot find accommodation with relatives or friends should notify either the hospital or clinic they attend or the Diabetic Association.

Letters, Notes, and Answers

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Aitiology Westcent, London.* ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated.

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ANY QUESTIONS?

Elephantiasis after Plaster

Q.—*A woman of 40 has elephantiasis of one leg due to application of plaster-of-Paris for 14 weeks some three years ago. Her renal function tests are satisfactory. What form of treatment will improve this complaint?*

A.—It is probable that this condition could have been prevented if elastic compression had been applied to the limb as soon as the plaster was removed—starting 3 years late is a severe handicap. An attempt should be made, however, to get rid of as much of the swelling as will subside after rest in bed for a few days with the leg elevated, and then an Unna's (zinc gelatin) paste bandage should be applied from the webs of the toes to the upper limit of oedema. This or a similar supporting bandage should be worn continuously till the leg no longer swells beneath it—that is, till active muscular movement has restored the circulation—a process which may take some months to complete.

Repairing Torn Perineum

Q.—*Will you please describe the U.C.H. method of "repairing the perineum" at childbirth?*

A.—The perineum is not repaired until after the birth of the placenta except in cases of operative delivery, when repair is carried out as soon as the child is delivered and while the patient is still under the anaesthetic. In all other cases local analgesia is used. The patient is placed in the lithotomy position, and a syringe, preferably of 20 c.cm. capacity, is charged with a solution containing 1/2% procaine and 1 : 200,000 adrenaline. Commencing posteriorly, this solution is injected under the margins of the tear at both sides through the whole of its length, extending up the vaginal wall as far as necessary. A swab moistened in this solution is placed on the raw surface and an interval of five minutes is allowed for the analgesic to take effect. A self-retaining retractor is now inserted (Gelpi's pattern is useful) so as to give a good exposure of the posterior vaginal wall. The vaginal mucosa is now united with interrupted catgut sutures down to and including the mucocutaneous junction. The retractor is now removed, and two or three deep catgut sutures are inserted into the muscles of the perineum. The perineal skin is now united with interrupted silkworm-gut or nylon sutures. These are inserted so as to take in the superficial part of the muscle layer. It is important to leave no dead space. These sutures are loosely tied, to allow for the oedema which is likely to occur; the ends are left long and knotted together. To complete this small operation, a rectal examination is made to ensure that there has been no damage to the rectum and that no sutures have been inserted through the rectal mucosa. A further important point in extensive tears is that, before repairing the perineal muscles, it is essential to look for damage to the external sphincter ani. This is often torn, usually to one side of the midline. The ends should be found and brought together with one or two mattress sutures of catgut. All perineal tears that exceed half an inch in length should be sutured. It is impossible to repair such tears adequately with one stitch. When the perineum is torn for a distance of half an inch or more the vaginal wall is almost always torn for an equivalent or even greater, distance. This must be exposed and properly sutured.

Treatment of Whooping-cough Paroxysms

Q.—*Is ether of value in severe paroxysms of whooping-cough apart from convulsions? What are the recommended doses for the intramuscular and rectal routes at 1 month and 1 year? Which route is considered the best? Is there any danger of sloughing by the intramuscular route?*

A.—There is no evidence to prove that ether is of any value in controlling the paroxysms of whooping-cough, and its use has been abandoned in fever hospitals. The intramuscular route is painful and occasionally gives rise to abscess formation; 0.5 to 1 ml. every second day are suitable doses at 1 month and 1 year respectively. Rectal injections of 10% ether in olive oil in doses of 10 to 30 ml. twice a day are safer. Luminal, 1/12 gr. and 1/4 gr. respectively twice a day, is a much more effective remedy, and free from risk provided cumulative effects are watched for and avoided.

Shock Treatment

Q.—*Has insulin injection in small amounts been used and found effective in the mild depression phase of mild psychosis?*

A.—This treatment is of no use in this condition except to improve nutrition and for its suggestive effect. If the diagnosis is correct, then electrical convulsion therapy would be effective in such a case. On the other hand, if the condition is mild, it may clear up very soon anyhow.

Tug-of-War for Girls

Q.—*At a grammar-school sports day I asked why the senior girls should not have a tug-of-war. The teachers were horrified. They said, "It wouldn't be safe for girls." I had no proper evidence to answer this objection, and could only say that girls were to-day doing work as railway porters, farm labourers, heavy lorry drivers, and heavy load lifters, all without any apparent harm. I should like to know what is the opinion of those fit to judge.*

A.—As girls have seldom engaged in these, there is no direct evidence that tugs-of-war would be harmful to them. As a physician who was once an athlete, I regard the objection to this form of exercise for girls as reasonable. Having taken part in many tugs-of-war I regard them as being, from the medical standpoint, the least desirable form of athletics commonly undertaken by adolescent boys. The comparatively long periods of stasis with contracted muscles and fixed thorax and the absence of rhythmic movement suggest that the cardiac strain involved is probably greater than in more mobile exercises. The female muscles, seen at their best in more graceful athletics such as the back crawl in swimming, would, I think, be less adapted to tug-of-war. I should unhesitatingly support the teachers' objection on medical as well as aesthetic grounds. Tug-of-war is certainly the least graceful of all sports.

Chronic Vasomotor Rhinitis

Q.—*What is the approved treatment for chronic vasomotor rhinitis with obstinate nasal obstruction, especially at night? Relief with ephedrine or benzedrine is only temporary.*

A.—The usual treatment for this condition is to cauterize the inferior turbinates under a local anaesthetic. A deep linear burn is made from behind forwards, along the medial aspect of the bone. This results in a scar, which binds the spongy tissues down to the bone. If the posterior ends of the turbinates are much enlarged, they should be removed by snare under general anaesthesia.

Cause and Treatment of Urticaria

Q.—*What is the modern treatment, local and general, for severe and intractable cases of urticaria in adults?*

A.—The treatment of urticaria is: (*a*) To inject subcutaneously 5 minims of adrenaline chloride solution (1:1000), and if the case is a severe one to repeat the injection of another 3 minims 1/4, 1/2, 1, 2, 4, and 8 hours later, as there will be a tendency for the symptoms to reappear when the temporary effect of the adrenaline has worn off. The adrenaline action may be sustained by injecting slowly adrenaline (1/2 to 1 c.cm. of adrenaline (1:500) in an oil, gelatin, or glycerin base). (*b*) To give ephedrine hydrochloride 1/2 gr. 4-hourly until the rash is clear for 48 hours, and luminal 1/2 gr. night and morning to lessen the itching. (*c*) To relieve local irritation by warm alkaline baths, dusting the skin with an orris-root-free talcum powder containing 1/2% menthol, or employing a calamine lotion or cream containing menthol 1% and phenol 1%. (*d*) To clear the gastro-intestinal tract by giving an emetic early, or saline aperients, castor

ol, or calomel later. (*e*) To reduce the food intake, forbid alcohol, and force fluids.

To prevent recurrences the cause should be determined, and a careful history, the use of skin tests, and the employment of elimina-tive measures in the environment and diet are essential. Certain substances may cause urticaria in any individual—the injection of certain drugs (histamine, morphine, and derivatives), the eating of decomposed foods, the bites and stings of certain insects and jelly-fish; but such attacks are probably only occasional and the cause can be readily recognized.

Intractable urticaria is usually an allergic manifestation in an allergic subject. The allergic causes include: (*a*) inhaled substances (feathers, down, animal hairs, pollens, house or occupational dusts, insecticides, moulds, and fungi); (*b*) ingested substances, ordinary foods or common drugs (aspirin, quinine, phenolphthalein, sulphon-amides); (*c*) injected substances, such as an overdose of allergen following serums, blood transfusions, the bites and stings of insects, or following injected drugs, vaccines, endocrine substances, or gland extracts; (*d*) infectant substances from bacteria, intestinal parasites, or mycotic infections; (*e*) contactant substances—the touch or lick of various animals, or the use of their products in clothing or furnishings, the handling of certain foods (flour, fish) or plants (primula), the use of cosmetics, dyed clothes, or even adhesive plaster; (*f*) physical agents such as light, heat, cold, and trauma.

In chronic cases the first thing to do is to stop all previous medication, as drugs play such a large part in its causation. Inhalant factors are the next commonest cause, especially when cases are worse in bed, during the night, or on waking, due to a sensitivity to feathers, down, or horsehair in the bedding. During the day house and occupational dusts play an important part, and desensitiza-tion is necessary. Foods are the least commonest specific cause, but most patients suffer from flatulent indigestion, and 20 minims of ac. hydrochlor. dil. *B.P.* in a wineglassful of water at the beginning of each meal is helpful. The raising of the basal metabolism by adequate doses of thyroid extract is often necessary. If the cause cannot be determined or removed, the withdrawal of 10 c.cm. of blood from the vein at the elbow and its injection intramuscularly into the buttock on six occasions at intervals of five days is usually more efficacious than other methods of treatment recommended, such as vaccines, histaminase, peptone, calcium, or milk; or wholesale surgery, the sequential removal of teeth, tonsils, appendix, gall-bladder, or tubes.

Urticarial outbursts often follow emotional storms, anger or fright, in states of fatigue, or after exertion. Such incidents utilize any available protective adrenaline and so render the sufferer more susceptible to some offending allergen acting during this adrenaline-depletion or exhaustion state.

Trophic Ulcers

Q.—*I should be grateful for suggestions as to the treatment of painful trophic ulcers of the legs in a lady of 70 with very long-standing Raynaud's disease.*

A.—The question does not give sufficient information about the situation and character of the ulcers. At the age of 70 arterio-sclerosis can be assumed to be present and operations on the sym-pathetic nervous system are not advisable. Prolonged recumbency is also contraindicated by the age, and ambulant treatment with some form of occlusive dressing such as elastoplast would be preferable.

Shooting Pains in the Head

Q.—*A patient aged 65 has for the last three months had a shoot-ing pain in the right side of his head if he sneezes, strains, or stoops. Clinical examination is negative; B.P. 114/60. The pain lasts about 5 minutes and is never there unless started by a strain or sneeze. What might be the cause of this, and what treatment can be suggested?*

A.—There is really too little evidence in this case upon which to establish a diagnosis. The most common cause is raised intracranial pressure, such as may be associated with a cerebral tumour. Tumours in the neighbourhood of Meckel's cave might cause such pain as is described, but they are usually accompanied by sensory loss in the corresponding trigeminal area. A lumbar puncture and examina-tion of the C.S.F. might give a pointer to the diagnosis. Until this is established, treatment should be by simple analgesics.

Exposure to Blast

Q.—*What should be done if one is about to be exposed to bomb blast? Should one open one's mouth or close it, hold one's breath or breathe easily? Close the ears and nose with the fingers and close the mouth? Or what should one do to diminish the probability of concussion to the lungs?*

A.—*Open or Closed Mouth.*—Blast does not affect the lungs by way of the mouth. On the other hand it may, at high pressures, affect the nasal mucosa and possibly the pharyngeal. On general principles, therefore, but not because of the lungs, keep the mouth shut. At the beginning of the war there was a widespread belief that one ought to bite on something during an air raid. I could never find the basis for this belief, and its most reasonable basis appears to be to prevent people from biting their tongue when they "jump" at the explosion. I can see no use in the practice.

Hold One's Breath or Breathe Easily.—There is no empirical answer to this question, for we have not been able, in experiment, to disentangle the concussion effects on the inflated and deflated lungs. The general theory deriving from experiments suggests, how-ever, that an "airless" lung would be less affected than one inflated. Since this is impossible to achieve, "Don't bother."

Close the Ears with One's Fingers.—Yes, definitely.

Close the Nose.—In spite of the knowledge we have that at high pressures the nasal mucosa can be hurt, I should say no. Keeping the ears, mouth, and nose shut would seem to me a slightly difficult manœuvre.

In general the best advice therefore would be to lie flat on one's belly, behind, if possible, some stout cover, even in the gutter up against a pavement—with one's mouth shut and one's fingers in the ears. Indoors keep away from glass, and take what cover one can to prevent being hit by flying debris or of being buried under debris—e.g., get into a Morrison shelter if available, or under the stairs, etc. The real danger of flying bombs is not the direct effects of blast on the chest, but the danger of being hit by bits and pieces thrown about by the blast. The direct effects are not likely to be experienced, or to be serious, except very close to the burst, where precautions of the kind referred to are unlikely to help anyway.

Transmission of Cancer by Transfusion

Q.—*Is it possible for cancer to be transferred from one person to another by means of a blood transfusion? If it is possible for malignant cells to be carried in the blood stream from one part of the body to another, I cannot see why they should not be transferred from one person to another unless the blood were stored long enough to render the malignant cells non-viable. Are there any recorded cases of this occurring, and is there any evidence as to how long malignant cells would survive under normal storage conditions?*

A.—Malignant cells are carried in the blood stream from one part of the body to another, but it is probable that only a proportion of such cells survive and form new metastases. If such cells were present in transfused blood the chances of survival of the cells in another heterozygous person would be so small as to be negligible. There are no recorded cases of transference of cancer by blood transfusion. Malignant cells would probably survive 2 to 3 days under normal storage conditions. Hence the reply to the lay ques-tioner would be: In view of (*a*) the well-known difficulty of trans-planting cancer successfully from one human being to another, even when masses of living cancer cells are grafted; (*b*) the probable lack of viability of a proportion of circulating cancer cells even within the body of the cancer patient himself; (*c*) the much greater lack of viability of cancer cells in another heterozygous human host; (*d*) the rarity of blood from a cancer patient being used for transfusion because (*e*) escape of cancer cells into the blood stream is a phenomenon associated with advanced cancer, it is justifiable to answer "No."

INCOME TAX

Deductions under "Pay as you Earn": Cost of Assistant's Rooms

A. S. employs an assistant "at a salary of twelve guineas a week all found." Each month the assistant receives two cheques, one for salary and one for payment of rooms. Should tax be deducted from the latter payment?

*** Yes. Both cheques are in respect of emoluments falling within the class to which "pay as you earn" is applied, and the assistant is liable to tax on the full twelve guineas.

Amount of Tax Payable

W. D. inquires what tax is payable monthly on a salary of £525 by a single man paying £8 18s. 4d. life assurance premium a year.

*** The calculation for 1944–5 is as follows:

Earnings			£525 0 0
Deduct Personal Allowance	£80 0 0		
Earned Income	£52 10 0		
		£132 10 0	
Taxable Income			£392 10 0
Tax at 6s. 6d. on £165 0 0	£53 12 6		
,, ,, 10s. 0d. ,, £227 10 0	£113 15 0		
		£167 7 6	
	£392 10 0		
Less Life Assurance Relief: £8 18s. 4d. at 3s. 6d.			£1 11 2
Net tax payable for the year			£165 16 4

The monthly deduction should therefore approximate to 1/12th of £165 16s. 4d.—i.e., £13 16s.

"Pay as you Earn"

A. P. is employed by two authorities, one of which usually pays the fees two or three months after they are earned. In consequence some fees earned before April 5, 1944 (and therefore part of the income already assessed for 1943–4) were paid after that date and suffered deduction of tax under "pay as you earn." What is his remedy?

*** It has to be borne in mind that "pay as you earn" is a system of *collection* of tax; the old assessment procedure still operates, though on the basis of the current year instead of the preceding year. The tax payable by A. P. for 1943–4 has been reduced by 7/12ths "cancellation," but the precise amount to be cancelled is governed by special rules and apparently has not yet been calculated; further cancellation is subject to certain conditions compliance with which may remain uncertain until Nov. 5. But sooner or later A. P. will receive a statement from the inspector of taxes setting out the full facts, and he can safely wait for that statement to be sent to him. It may perhaps be added that unless the authority in question expedites its dates of payment he will not suffer deduction of tax in 1944–5 on more than a year's fees.

J. L. W. retired in 1937. During 1942–3 he received fees amounting to about £500 for examining patients. He inquires (1) whether he comes under the P.A.Y.E. system and (2) whether he is entitled to travelling expenses.

*** (1) The first point to decide is whether J. L. W. is assessable under Schedule E—i.e., whether he is in "employment." The answer to that depends on whether the arrangement or contract under which he works establishes the relationship of "master and servant." If it does, he is assessable under Schedule E and his earnings come under P.A.Y.E.; if J. L. W. is his own master the fees are assessable under Schedule D and P.A.Y.E. does not apply. Prima facie the former is the case. (2) The expense of travelling from one's residence to the place of employment is not deductible. But an exception has been made to meet wartime changes of residence, etc., subject to a maximum deduction of £10.

Sale of Practice: Expenses

N. P. has sold his practice and stored his furniture until he sets up practice again. Is any part of the expense of removal and storage of the furniture allowable?

*** No; such expenses are not incurred in carrying on the profession, but after the professional activity has ceased.

LETTERS, NOTES, ETC.

An Argentine looks at British Plastic Surgery

To see ourselves as others see us is always an interesting—if at times a mortifying—experience. In a paper from the Instituto de Clínica Quirúrgica, the leading surgical clinic in South America, an Argentine surgeon describes from personal observation the treatment of fractures of the middle third of the face in British civil and military practice (*Día méd.*, 1944, **16**, 361). The author, Dr. R. Castro O'Connor, recently completed a study of plastic surgery in this country as a British Council scholar, and his careful and detailed survey of a particular aspect of this subject would seem to indicate that he employed his time to very good purpose. For convenience, he "divides" the face into upper, middle, and lower thirds. The middle third includes the superior maxilla and the nasal, ethmoid, and malar bones. The mode of production, diagnosis, and treatment of fractures of this region are reviewed at considerable length, and different techniques used by individual British plastic surgeons are described. The author stresses particularly the importance of the closest collaboration between the plastic and the dental surgeon, and concludes with a very generous tribute to the "inimitable" Sir Harold Gillies, with whom he spent most of his time, and also to Prof. T. P. Kilner, Mr. A. H. McIndoe, and Mr. R. Mowlem, whose units he visited for varying periods. Anglo-Argentine relations are complex and fraught with difficulties at the present time, but it is good that medical science and practice should provide common ground for countries which are not closely linked at the political level. Whatever ideological or political divisions may embarrass or disturb international relationships, medical men of all countries are animated by the same fundamental aims and interests, and are heirs to a common tradition which is as old as civilization. In an age of competing millenarian solutions to human ills, it is well that medical men should remember this and jealously guard their right to the free exchange of views and experience with professional brethren not only of their own but of other nations.

Sickness Records of Hospital Nurses

Dr. W. NORMAN TAYLOR (Radstock) writes: Dr. Wilkie (May 13, p. 670) quotes figures to show that the health of non-resident hospital nurses is not so good as that of the resident ones, and uses these figures as an argument against the system of allowing nurses to live out. He apparently does not realize that his figures could equally well be used by an advocate *for* this non-resident system. They merely show that resident nurses do not consult a doctor so often, not that they are less often sick—two very different things. In other words, they could as well be used to suggest that Dr. Wilkie's nurses are being discouraged from reporting sick when living under the eye of authority. Such a state of affairs is all too common in some of our hospitals. Surely our nurses can have the same privileges as the rest of the general population, and one of those is the privilege of going sick when one feels like it—and without asking permission.

Army Council and Wounded Medical Officers

Dr. F. C. DURBIN writes: It is now the policy of the Army Council to retain in the Service a medical officer who has been so severely wounded in action as to necessitate amputation of a leg, although the individual concerned may express a desire to be released in order to join the E.M.S. By becoming a civilian he would be enabled to acquire experience in hospital practice, while if retained in the Army he is liable to be posted as medical officer to a combatant unit in this country only. There, if he does not actually stagnate, he will fail to increase his knowledge of medicine to the maximum advantage. I feel that such individuals should be given the best possible opportunities for starting afresh, particularly as most have joined up soon after qualification. Their places could easily be filled by some of the many hundreds of young men still in the E.M.S. who have been so employed since the beginning of the war. I consider it a shameful policy to utilize a disabled man in the Services against his wish. It would seem that the Army is determined to extract more than its pound of flesh.

The D.P.M.: A Minimum Requirement

D. F.-R. (Lancs) writes: I refer to your correspondent's observations upon the above (July 15, p. 102), and as I have been a teacher and tutor for this diploma over a period of years my remarks may be of value to him, and to other officers contemplating obtaining it. I agree that the standard of the examination has required improvement, but actual preparation time remains about the same, as much obscure psychology and physiology has been eliminated or has at least ceased to figure in the actual tests. In Part II the psychiatric examiners are, by their writings and practice, acknowledged as experts in all phases of mental disorder, keep well within the scope of the prescribed syllabus, and maintain a very fair balance between the various subdivisions of the specialty in their questions. I am convinced most holders of the Diploma wish to feel they are recognized to advise expertly in the widest conception of psychological medicine, and not in the limited mode your correspondent suggests. Undoubtedly the standard in neurology is especially high, but as more and more of us are wont to describe ourselves as neuro-psychiatrists, it is well this designation is not assumed, unless our ability is well proven. With reference to general practitioners and the Diploma, I can state that I have coached many while they have been carrying on their practices, and their pass record has been most creditable. My chief complaint about the examination concerns Part I, which is still far too academic, of no value to the candidate for his future practice, and is a real deterrent to those of more mature years contemplating the course of instruction. I strongly recommend your correspondent to have a "stab" at the examination as soon as possible: I am sure he will find many of his "notions" ill founded.

Warts

Dr. T. C. GIPSON (Pinhoe, Devon) writes: In "Any Questions?" of July 22, under the heading "Warts," the advice given for treatment of a doctor's child for wart on the knee is to apply formalin for fifteen minutes daily. Surely this is unnecessarily protracted in a doctor's household. A very much quicker method is: Surround the wart with a trace of vaseline or ointment, and apply concentrated nitric acid with a match so as to leave a definite bead of wet fuming acid on the wart; keep the child with the leg up until the acid has dried off; a little smarting will be felt after five minutes. Next day the top of the wart is cut off with an old razor blade until the roots show unstained yellow; another application with a match-stick which will sting for ten minutes, and the wart is finished. N.B.—Do cutting off the dead wart it is important to stop before bleeding occurs because this dilutes the acid on the second application. Incidentally, it is painless as long as the wart is deeply stained.

Correction

We apologize for the error which crept into the annotation on "Nutrition and the War" published in the *Journal* of July 15 (p. 84). Dr. Sydenstricker did not observe that it was "a pity that the pregnant woman does not get her unborn child's ration book as soon as she is pregnant instead of ten months later." Since July 25, 1943, the pregnant woman has in fact been entitled to her unborn child's ration book as soon as pregnancy is established and she makes application to the Food Office